ALPINE®

SERVICE MANUAL

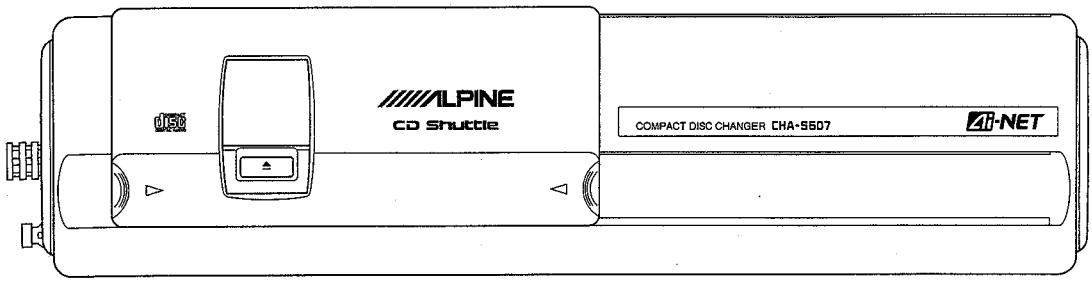
Compact Disc Remote Changer

CD Shuttle

COMPACT disc DIGITAL AUDIO

– REVISED –

● For the CD deck mechanism parts (DR24A050) of this model, refer to the Service Manual
• DR Series (68P30571W04).



Ai-NET

CHA-S607

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Specifications

<CD SECTION>

System	Optical (Compact Disc System)
Quantizing Bit Number	20 Bit Linear System
Channels	2 Channels, Stereo
Distortion (997Hz)	0.02%
Frequency Response (Ref. 1kHz)	±2dB (17Hz~19.997kHz)
S / N Ratio	90dB
Channel Separation	80dB (997Hz)
	70dB (10.007kHz)
De-Emphasis (Ref. 1kHz)	-20±3dB (4kHz)
	-20±3dB (16kHz)

<GENERAL>

Power Supply	14V DC (10.5~16V allowable)
Output Voltage / Impedance	850±150mV / 10k ohm
Semiconductors	15 IC's, 27 Transistors, 5 Diodes, 7 Zener Diodes
Dimensions (W×H×D)	279×71×178 mm
Weight	2.5kg

<COMPACT DISC>

Maximum Playback Time (at Stereo)	More than 60 minutes
Track Pitch	1.6μm
Modulator Frequency	44.1kHz
Transfer Rate	4.3218 Mbit / sec.
Dimensions	120×1.2 mm

Note : Due to continuing product improvement, specifications and designs are subject to change without notice.

CONNECTIONS

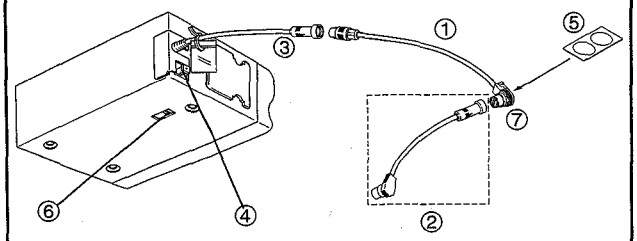


Fig. 22

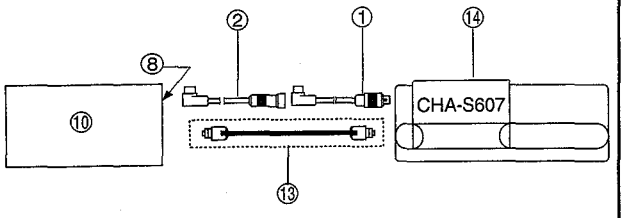


Fig. 23

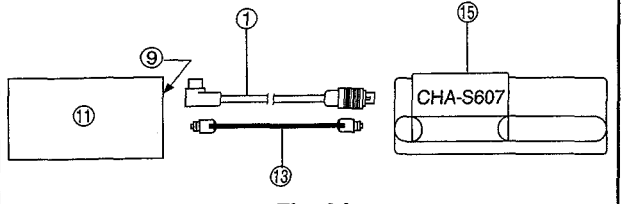


Fig. 24

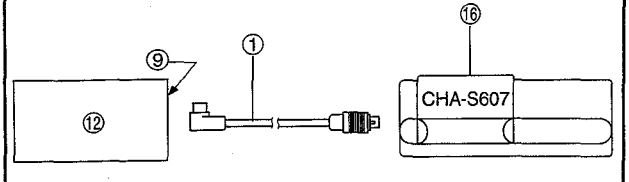


Fig. 25

● **Connections of Cables**
Connect the cables by referring to the illustration. Incorrect connection may cause damage.

1. **Ai-NET Conversion Cable and Ai-NET Cable**
Match the arrow of Ai-NET conversion cable to the pulling-out direction of Ai-NET cable.

2. **Ai-NET Cable and CHA-S607 Cable**
Match the arrows of Ai-NET cable and CHA-S607 cable.

3. **TDA-7638 etc. and Ai-NET Cable**
Connect the Ai-NET cable as illustrated.

① **Ai-NET Cable (Included in the CHA-S607)**
The Ai-NET cable provided, allows connection to any Alpine Ai-NET compatible, CD Shuttle Controller. Make sure that the "L" type connector of the Ai-NET cable is attached to the Controller and the straight connector is attached to the CHA-S607.

② **Ai-NET Conversion Cable (Included in the CHA-S607)**
The Ai-NET conversion cable provided, allows connection to an Alpine CD Shuttle Controller which is not Ai-NET compatible. Make sure that the "L" type connector of the conversion cable is attached to the Controller. The Ai-NET cable from the CHA-S607 will then be attached to the straight connector from the Controller.
NOTE:
The System Switch must be in Position 3 when using this cable.

③ **CHA-S607 Cable**

④ **Digital Output Terminal**
This terminal may be used to connect the CHA-S607 to other Alpine digital products, incorporating optical digital inputs. These products include a fiber optic cable that will plug directly into the Digital Output Terminal of the CHA-S607.
NOTE:
When using the Digital Output of the CHA-S607, the System Switch needs to be in either Position 2 or Position 3.

⑤ ***Input/Output Identification Label***
Place a label that matches the color of the connector onto the connector. This will identify the Input or Output connector when used with optional extensions.

NOTES:
1. When connecting the CHA-S607 to units with only RCA type Input connectors, the model 4913 (optional) DIN-to-RCA conversion adaptor can be used.
2. When the CHA-S607 is used in combination with the Alpine model 5953 (CD Changer Controller), the P.T.M. function (Preferred Track Memory) will be disabled.

This unit works in either the Ai-NET system or a conventional bus system.
1. When using the unit through conventional bus system. (Fig. 23)
* This unit works in combination with products using optical digital system.
2. When using the unit through Ai-NET system. (Fig. 24)
(In combination with products using optical digital system)
3. When using the unit through Ai-NET system. (Fig. 25)
(In combination with products not using optical digital system)

⑥ System Switch
⑦ "L" Type Connector
⑧ CD Shuttle DIN Connector
⑨ Ai-NET Input Connector
⑩ Head Unit, etc. with non Ai-NET System
⑪ Optical Digital Unit with Ai-NET System
⑫ Head Unit, etc. with Ai-NET System
⑬ Fiber Optic Cable (Included in the another factory unit or sold separately 4915/4916)
⑭ System Switch Position 1
⑮ System Switch Position 2
⑯ System Switch Position 3

Adjustment Procedures

1. Jitter Adjustment

1-1 Connections

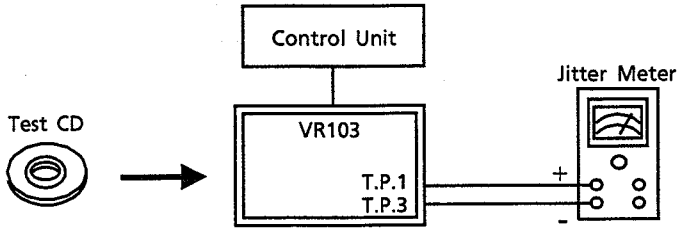


Figure 1

1-2 Preparations

(1) Test CD ..... A-BEX TCD-782 (1 st track)
(2) Power Supply Voltage DC14V

1-3 Switch Settings

(1) Power Switch (Control Unit) ..... ON
(2) Disc Play / Pause Switch (Control Unit) ..... PLAY
(3) Others (Control Unit) ..... OFF

1-4 Adjustment Procedures

(1) Set the mode to playback with the test disc loaded.
(2) Rotate VR103 fully counterclockwise.
(3) Using the Jitter meter, confirm the T.P.1 Signal shows a value.
(4) Carefully rotate VR103 clockwise until the Jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.

2. Tracking Balance Adjustment

2-1 Connections

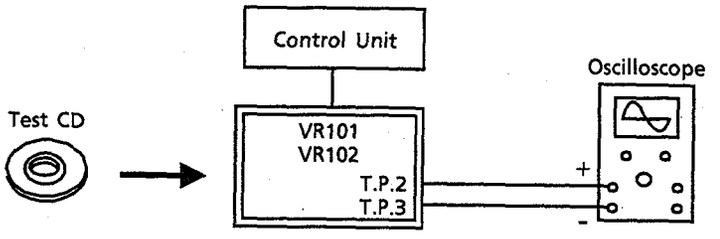


Figure 2

2-2 Preparations

(1) Test CD ..... A-BEX TCD-782 (8 th track)
or SONY YEDS-18 (7th track)
(2) Power Supply Voltage DC14V

2-3 Switch Settings

(1) Power Switch (Control Unit) ..... ON
(2) Disc Play / Pause Switch (Control Unit) ..... PLAY
(3) Others (Control Unit) ..... OFF
(4) RF Control (VR102) ..... Mechanical Center
(First time only)

2-4 Adjustment Procedures

(1) Load the CD magazine in the drive mechanism, select the test CD, and play the no-signal (-∞dB) track.
(2) Connect wires to T.P.3 and T.P.4.
(3) Connect the positive (+) input of the oscilloscope to T.P.2 and the negative (-) input of the oscilloscope to T.P.3.
(4) Observe the T.P.2 signal viewed from VR on the oscilloscope. (VR Reference=0V)
(5) Adjust VR101 so that the T.P.2 signal level is symmetrical above and below relative to VR (0V). (Whole waveform moves up and down.)
(6) Disconnect the wires previously connected to T.P.3 and T.P.4.

V1 = V2

Figure 3

3. Tracking offset Adjustment

3-1 Connections

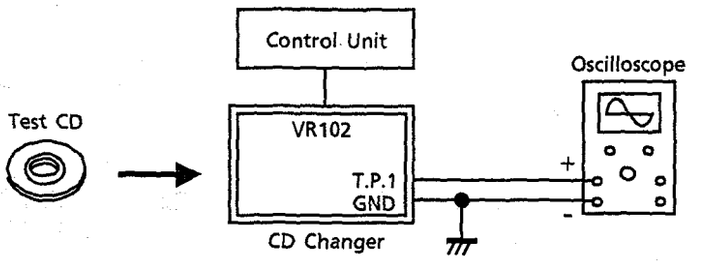


Figure 4

3-2 Preparations

(1) Test CD ..... A-BEX TCD-782 (6 th track)
(2) Power Supply Voltage DC14V

3-3 Switch Settings

(1) Power Switch (Control Unit) ..... ON
(2) Disc Play / Pause Switch (Control Unit) ..... PLAY
(3) Others (Control Unit) ..... OFF

3-4 Adjustment Procedures

(1) Connect the positive (+) input of the oscilloscope to T.P.1 and the negative (-) input of the oscilloscope to GND.
(2) Load the CD magazine in the drive mechanism, select the test CD, and play the track that has 1.2mm-wide scratch.
(3) Observe the T.P.1 signal on the oscilloscope.
(4) Adjust VR102 so that the returning waveform after the T.P.1 signal drop out is minimized as much as possible.
(5) Conduct the tracking balance adjustment once again.

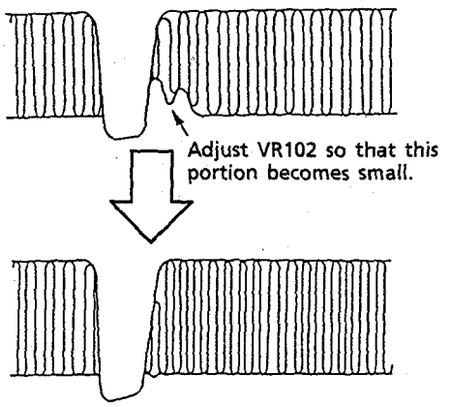
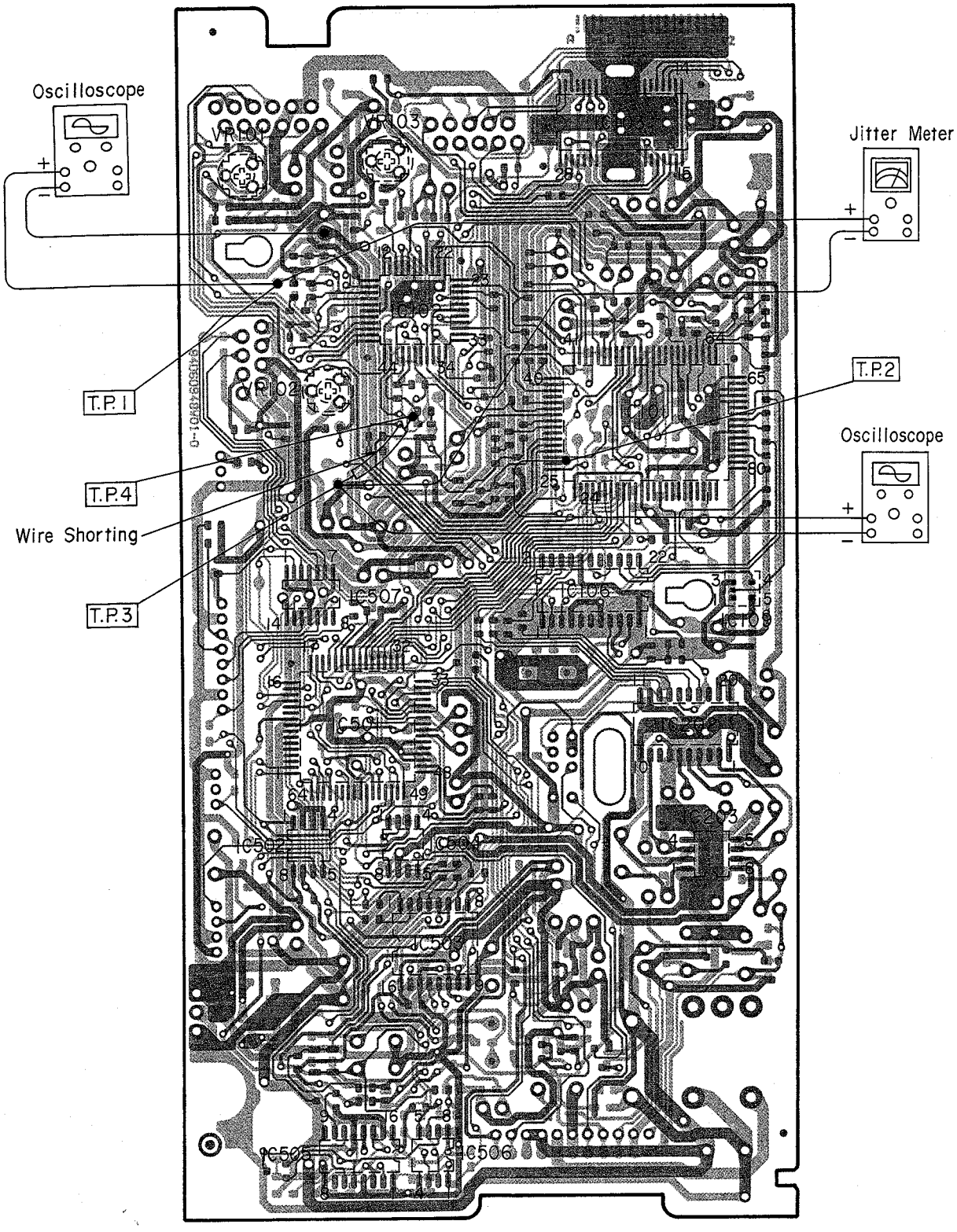


Figure 5

Adjustment Locations



Main P.C. Board (Foil Side)

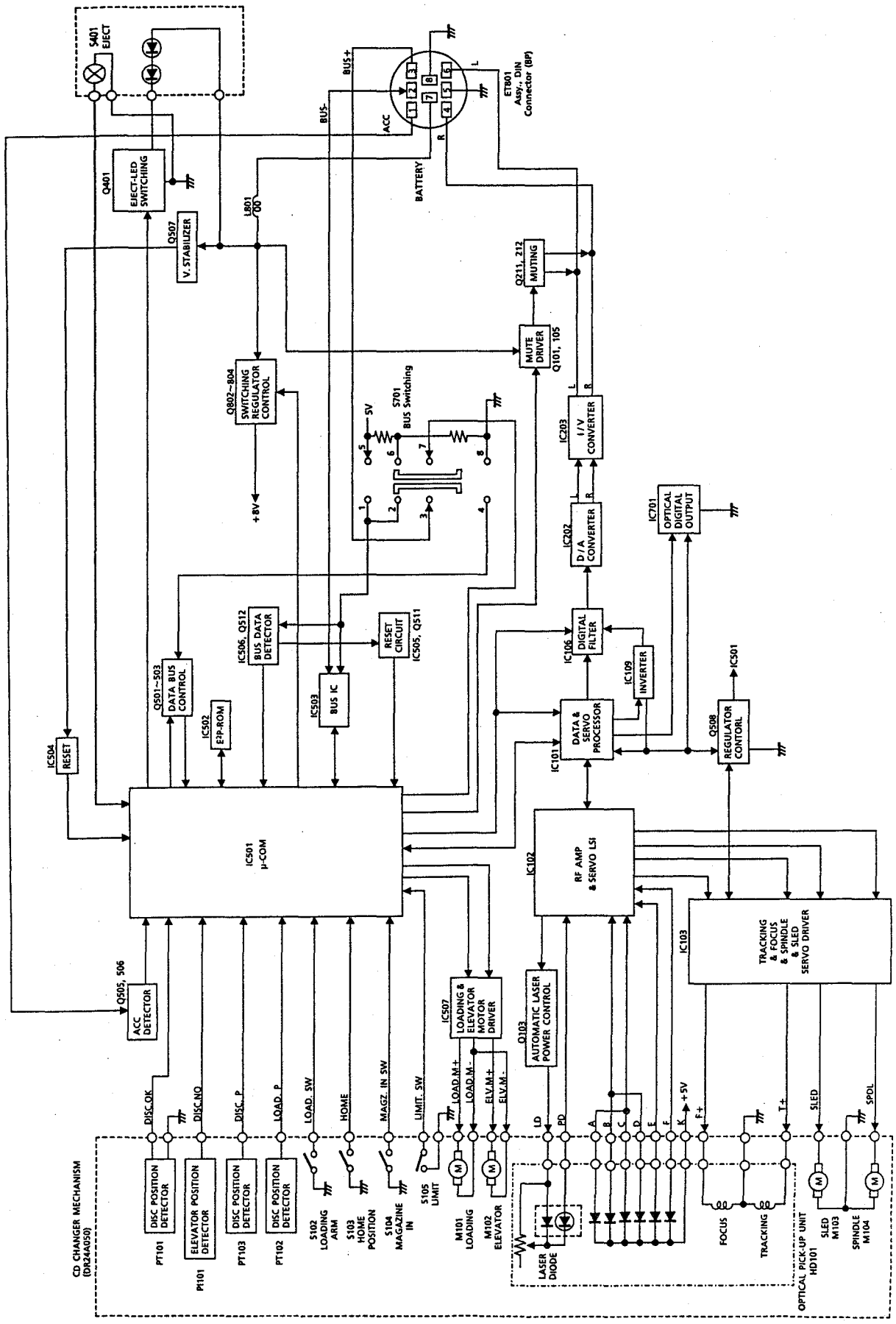
Description of IC Terminal

45552W31 (IC501)

No.	Symbol	I / O	Terminal Description
1	SCL	O	Data read clock output signal line.
2	SDA	I / O	Data reading and writing, Data input and output signal line.
3~8	NC	—	N.C.
9	GND	—	GND
10	EJT-LED	O	Lighting output signal terminal. (at PLAY, at PAUSE and at EJECT)
11	NC	—	N.C.
12	A-MUTE	O	Audio mute output signal terminal.
13	LOD M+	O	Output to move loading motor to direction for pulling in a disc.
14	LOD M-	O	Output to move loading motor to returning a disc to magazine.
15	ELV M+	O	Output signal to move up elevator.
16	ELV M-	O	Output signal to move down elevator.
17	V-CONT	O	Power supply and main power supply ON / OFF output terminal.
18	F-CONT	O	Focus gain control output.
19	$\overline{\text{LS-RST}}$	O	LSI reset output signal.
20	$\overline{\text{LOAD-SW}}$	I	Loading arm operation check switch input signal.
21	HOME	I	Elevator home position detection switch input signal.
22	MAG-SW	I	Magazine detection switch input terminal.
23	GND	—	GND
24	GND	—	GND
25	$\overline{\text{LMT-SW}}$	I	Sled motor inner circle limit switch input terminal.
26	LOCK	I	TC9236AF (IC101) lock signal input.
27	BUS 0	I / O	Command and data communication bus line.
28	BUS 1		
29	BUS 2		
30	BUS 3		
31	BUCK	O	TC9236AF (IC101) data communication clock output terminal.
32	$\overline{\text{CCE}}$	O	TC9236AF (IC101) chip enable signal output terminal.
33	BUS-OUT	O	BUS data output.
34	BUS-DET	I	BUS communication detection terminal.
35	RESET	I	Reset signal input terminal.
36	BUS-IN	I	Bus data input.
37	BATT	I	Battery detect.
38	ACC	I	ACC ON / OFF input signal.
39	$\overline{\text{EJT-KEY}}$	I	MAGAZINE EJECT key input signal.
40	V_{DD}	—	Regulator +5V terminal.
41	X2	—	Ceramic lock connection terminal for system clock 1. (4.19MHz)
42	X1	—	Ceramic lock connection terminal for system clock 1. (4.19MHz)
43	GND	—	GND
44	NC	—	N.C.
45	GND	—	GND
46	AV_{SS}	—	GND
47	HI-TEMP	I	High temperature detect sensor.
48	LO-TEMP	I	Low temperature detect sensor.
49	DISC-PH	I	Disc in detect sensor.
50	LOAD-PH	I	Loading end detect sensor.
51	DISC-OK	I	Unloading end detect sensor.
52	$\overline{\text{DISC-NO}}$	I	Disc number detect photo sensor.
53	BUS-SW	I	Bus / AI-Net switching.
54	GND	—	GND
55	AV_{DD}	—	Power supply terminal.

No.	Symbol	I / O	Terminal Description
56	AV_{REF}	—	Reference voltage input for D / A converter.
57	NC	—	N.C.
58	J-RESET	O	Reset output terminal.
59	NC	—	N.C.
60	J-RS	O	Register choice output terminal.
61	J-R/W	O	Register load output terminal.
62	J-SIN	I	Serial data input terminal.
63	J-SOUT	O	Serial data output terminal.
64	J-SCLK	O	Serial correspondence clock output terminal.

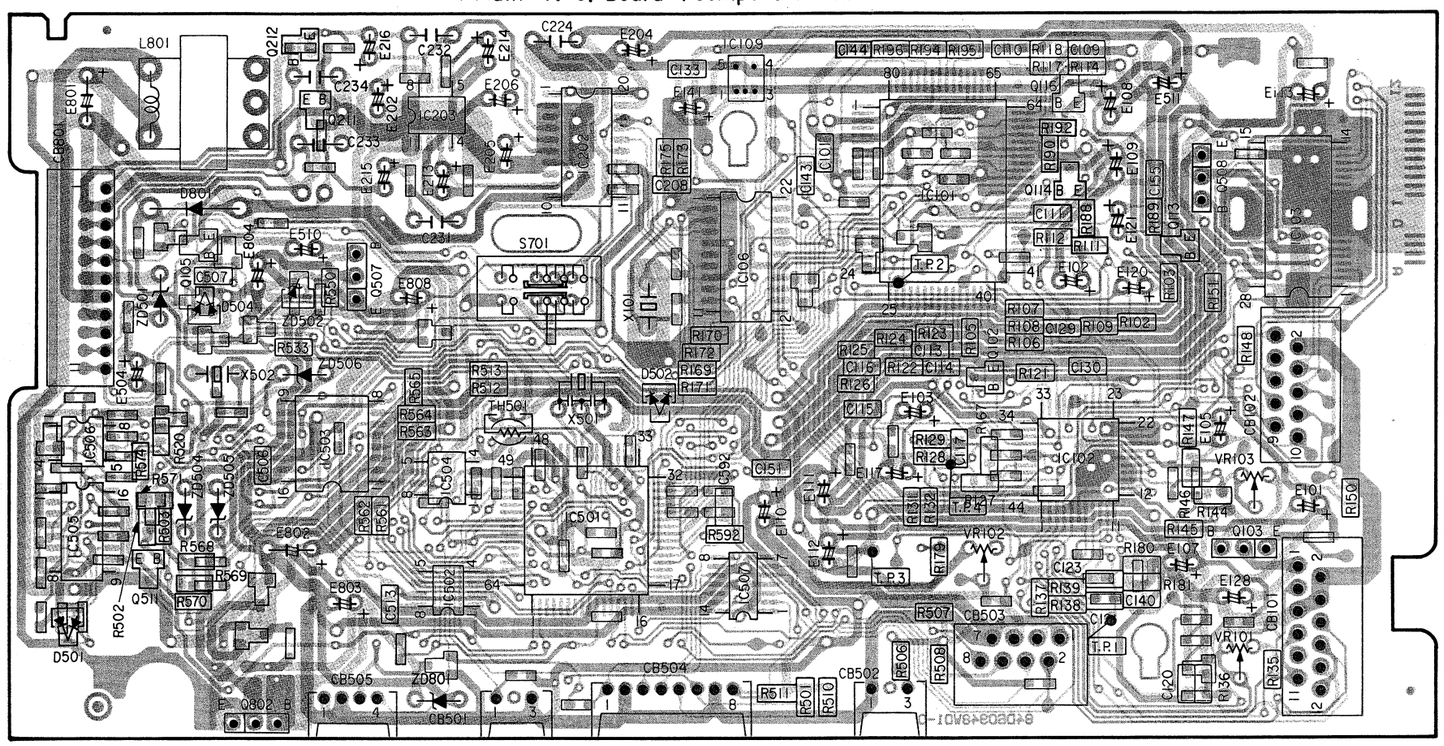
Block Diagram



MEMO

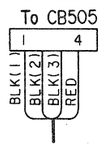
Parts Layout on P.C. Boards and Wiring Diagram (1/2)

Main P. C. Board (Component Side View)



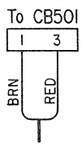
From Connector P. C. Board (CB802)

To CB505



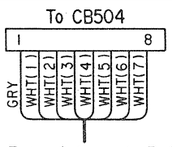
From Switch P. C. Board (CH7)

To CB501



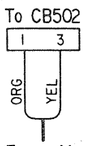
From Magazine Photo P. C. Board

To CB504



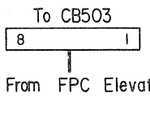
From Interrupt P. C. Board (CW104)

To CB502



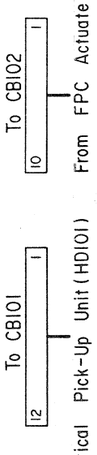
From Magazine LED P. C. Board

To CB503



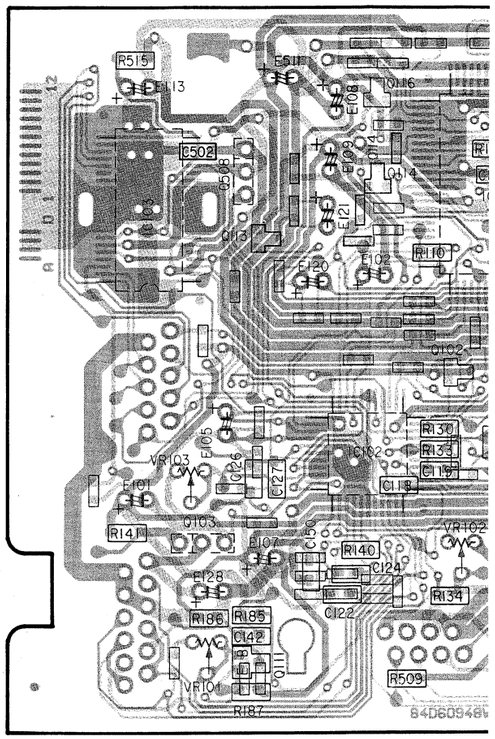
From FPC Elevator P. C. Board

To CB102



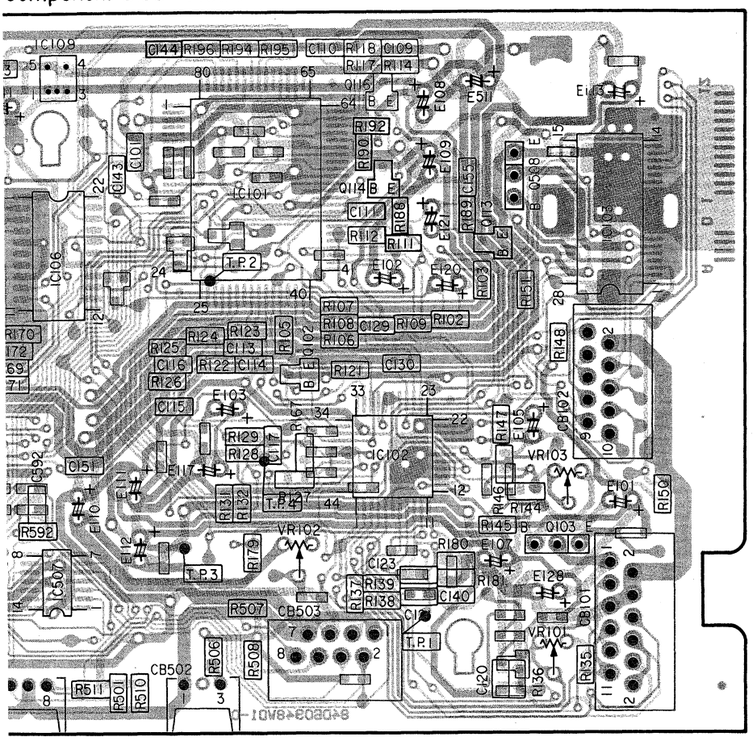
To CB101

From Optical Pick-Up Unit (HD101)

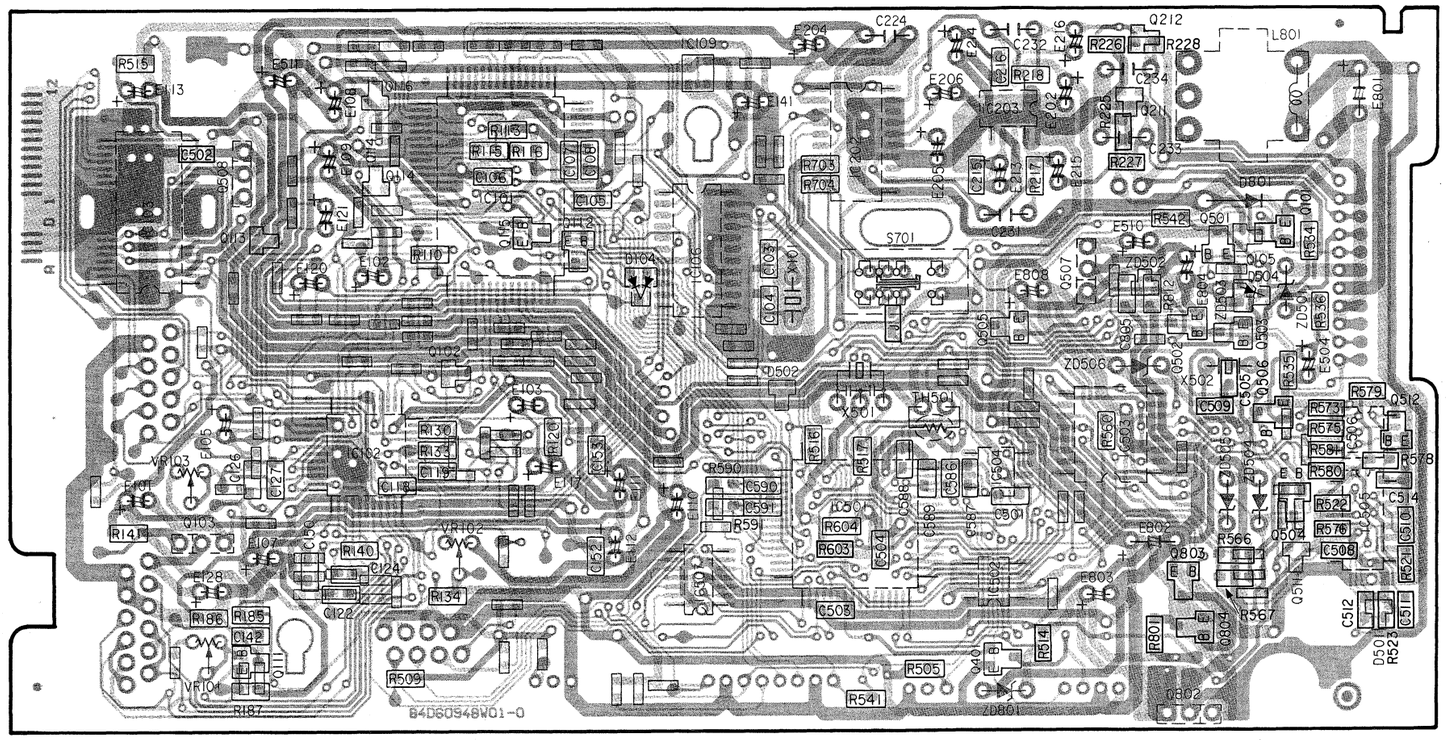


gram (1/2)

Component Side View)



Main P. C. Board (Foil Side View)



To CB102
From FPC Actuate P. C. Board

To CB101
From Optical Pick-Up Unit (HDI01)

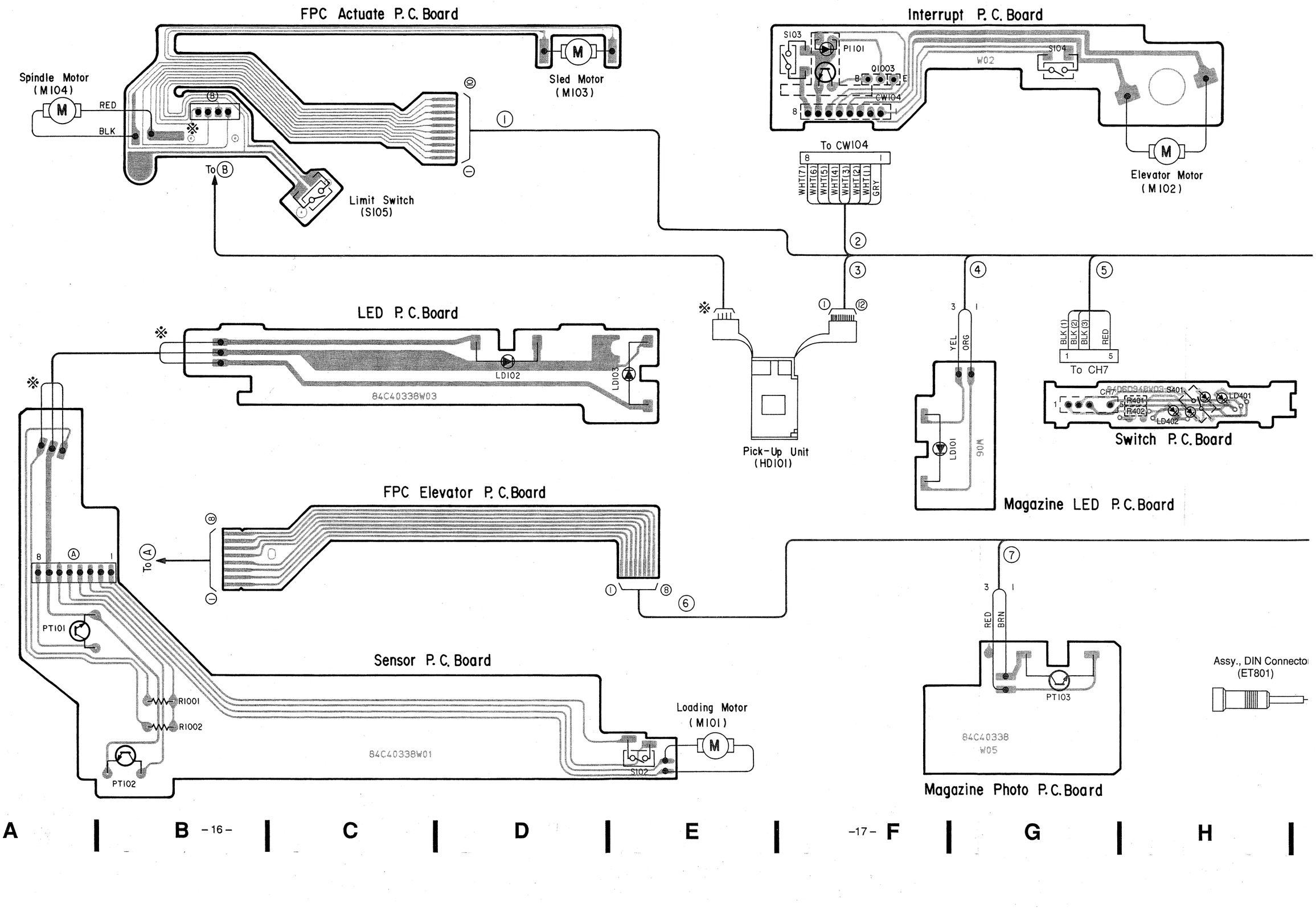
To CB502
From Magazine LED P. C. Board

To CB503
From FPC Elevator P. C. Board

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

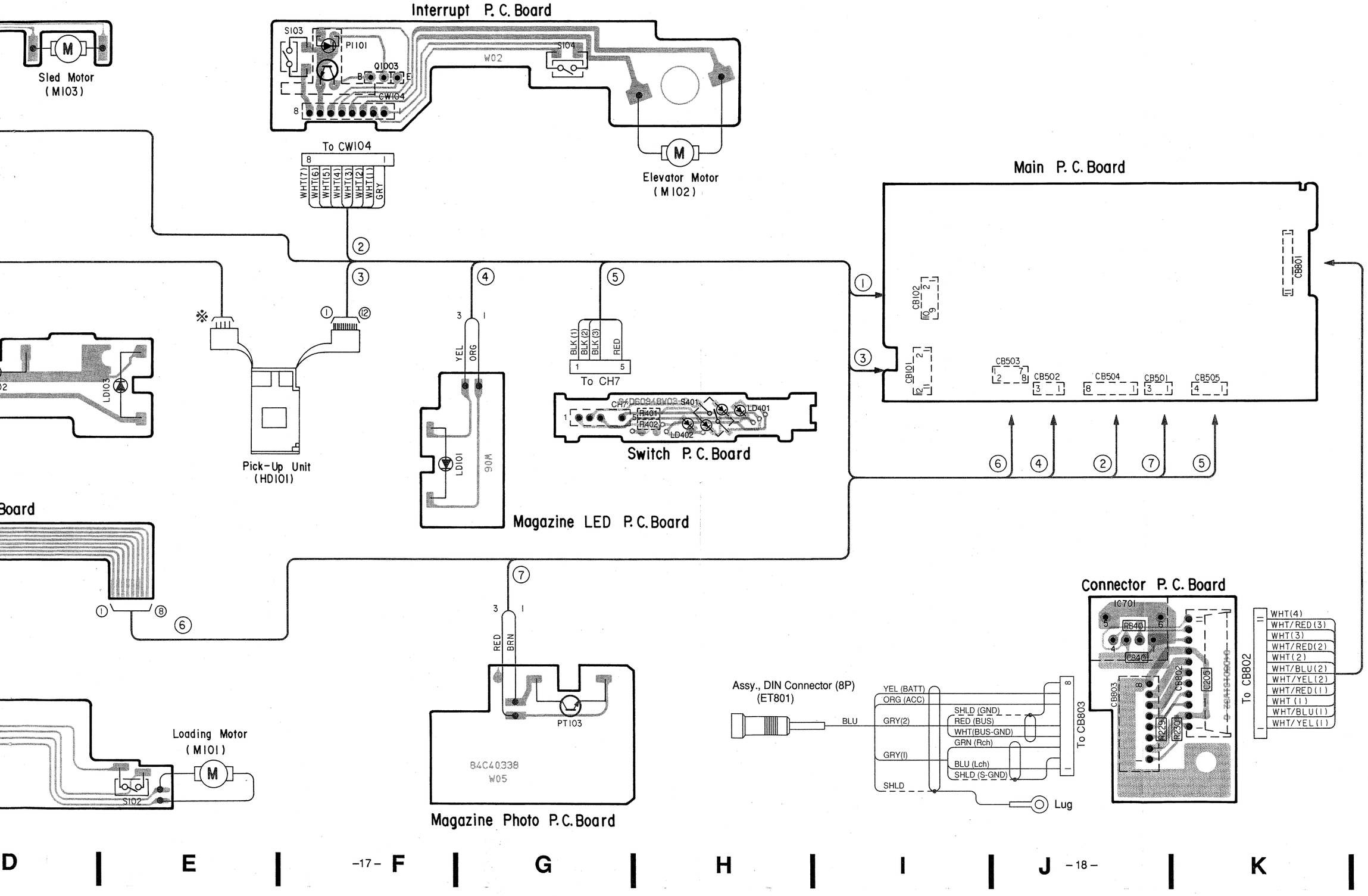
CHA-S607 CHA-S607

Parts Layout on P.C. Boards and Wiring Diagram (2/2) All P.C. Boards viewed from soldered side.



am (2/2) All P.C. Boards viewed from soldered side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern



Schematic Diagram (1/2)

IC	IC507	IC502	IC101
		IC102	IC501
Transistor (Q,PT,PI)	PT103 PT101 PT102 PI101 Q1003	Q111 Q112 Q102 Q115 Q116 Q114	
	Q103	Q113	

Main P.C.Board (1/2)

Magazine Photo P.C.Board

Magazine LED P.C.Board

Sensor P.C.Board

LED P.C.Board

Interrupt P.C.Board

HD101 PICK-UP UNIT

IC507 LB1836M

LOADING AND ELEVATOR MOTOR DRIVER

IC502 X24LC01SI

E²P-ROM

IC101 TC9236AF DATA and SERVO PROCESSOR

IC102 TA8191F RF AMP AND SERVO LSI

IC501 45552W31 μ-COM

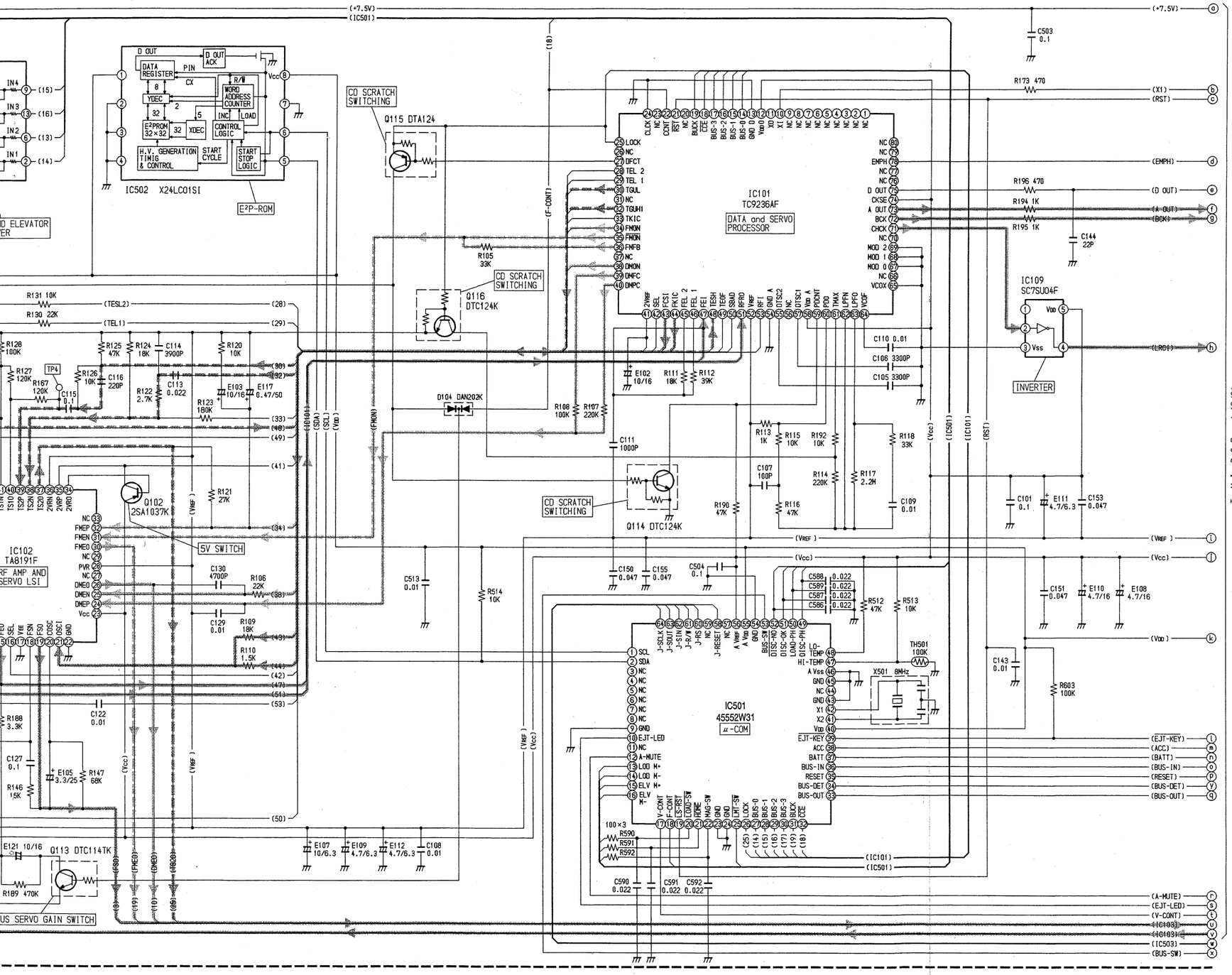
CD SCRATCH SWITCHING

5V SWITCH

AUTOMATIC LASER POWER CONTROL

FOCUS SERVO GAIN SWITCH

IC502 IC102 Q113 Q102 Q115 IC101 IC501 Q116 Q114 IC109



NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

IC101

1	5V	21	4.8V	41	4.2V	61	2.1V
2	5V	22	0V	42	5V	62	2.1V
3	0V	23	PS	43	2.5V	63	PS
4	PS	24	0V	44	2.5V	64	2.2V
5	PS	25	5V	45	2.1V	65	0V
6	PS	26	5V	46	2.1V	66	PS
7	PS	27	PS	47	2.1V	67	0V
8	PS	28	2.2V	48	2V	68	0V
9	5V	29	2.2V	49	2V	69	0V
10	PS	30	2.2V	50	2.2V	70	PS
11	PS	31	0V	51	PS	71	PS
12	5V	32	2.1V	52	2.1V	72	PS
13	0V	33	2.1V	53	PS	73	PS
14	PS	34	2.1V	54	0V	74	5V
15	PS	35	2.1V	55	PS	75	PS
16	PS	36	2.1V	56	PS	76	5V
17	PS	37	5V	57	2.5V	77	5V
18	PS	38	2.1V	58	5V	78	5V
19	PS	39	PS	59	5V	79	5V
20	PS	40	PS	60	PS	80	PS

IC102

1	1.8V	12	PS	23	5V	34	4.4V
2	2.1V	13	2.6V	24	2.2V	35	4.2V
3	2.1V	14	2.1V	25	2.2V	36	2.1V
4	2.1V	15	2.1V	26	PS	37	PS
5	2.1V	16	5V	27	PS	38	2V
6	4V	17	0V	28	2.1V	39	2V
7	0.2V	18	2.1V	29	2V	40	PS
8	2.1V	19	PS	30	2V	41	2V
9	PS	20	PS	31	2.1V	42	2V
10	PS	21	2.5V	32	2V	43	2V
11	2.1V	22	0V	33	PS	44	2V

IC501

1	NC	17	4.8V / 0V	33	PS	49	4.8V / 0V
2	NC	18	4.8V / 0V	34	PS	50	4.8V / 0V
3	NC	19	4.8V / 0V	35	4.86V	51	4.8V / 0V
4	NC	20	4.8V / 0V	36	PS	52	4.8V / 0V
5	NC	21	4.8V / 0V	37	4.88V	53	4.8V / 2.4V / 0V
6	NC	22	4.8V / 0V	38	4.8V / 0V	54	0V
7	NC	23	0V	39	4.8V / 0V	55	4.8V
8	NC	24	0V	40	4.86V	56	4.8V / 0V
9	NC	25	4.8V / 0V	41	PS	57	0V
10	4.8V / 0V	26	NC	42	PS	58	PS
11	NC	27	PS	43	0V	59	0V
12	4.8V / 0V	28	PS	44	4.8V	60	PS
13	4.8V / 0V	29	PS	45	0V	61	PS
14	4.8V / 0V	30	PS	46	0V	62	PS
15	4.8V / 0V	31	PS	47	4.5V / 0V	63	PS
16	4.8V / 0V	32	PS	48	5V	64	PS

IC502

1	0V
2	0V
3	0V
4	0V
5	PS / 0V
6	PS / 0V
7	0V
8	4.8V

IC507

1	7.6V	8	0V
2	4.8V / 0V	9	4.8V / 0V
3	4.8V / 0V	10	7.6V / 0V
4	7.6V	11	7.6V
5	7.6V / 0V	12	7.6V / 0V
6	4.8V / 0V	13	4.8V / 0V
7	0V	14	0V

IC109

1	NC
2	PS
3	0V
4	PS
5	5V

	E	C	B
Q102	5.03V	4.2V	4.44V
Q103	4.5V	1.8V	3.95V
Q111	1.2V	1.2V	1.5V
Q112	2.1V	2.05V	PS
Q113	2.1V	2.05V	PS
Q114	0V	PS	PS
Q115	PS	0V	PS
Q116	2.09V	2.1V	PS
Q1003	PS	0V	0.2V

<Measuring Conditions>

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track No.2 1kHz)

CD Signal Line (Digital)
Focus Error Signal Line
Tracking Error Signal Line
Spindle Drive Signal Line
Sled Drive Signal Line

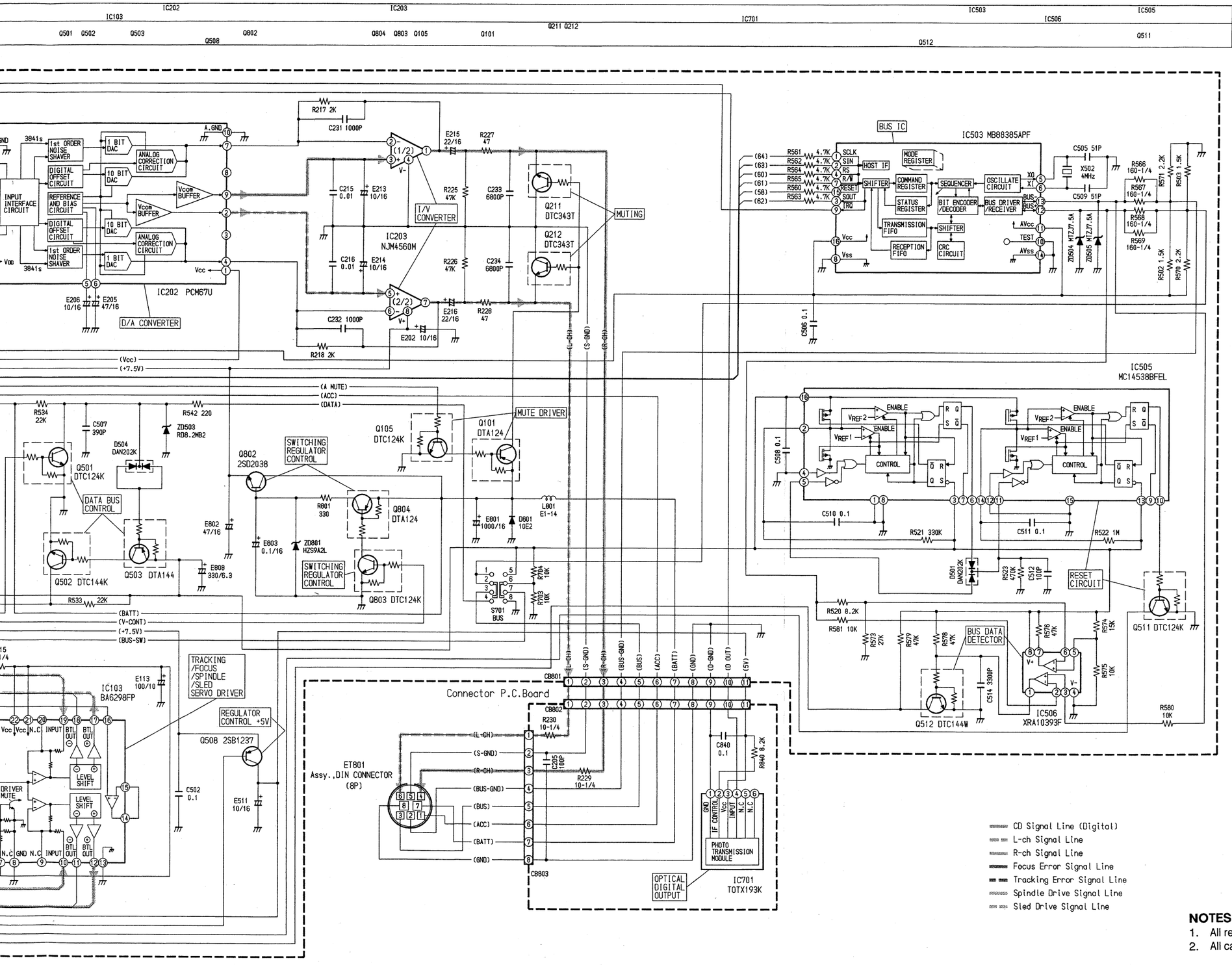
CHA-S607 CHA-S607

Schematic Diagram (2/2)

IC	IC504	IC106	IC103	IC202	IC203	IC701
Transistor (Q)	Q401	Q505 Q506 Q504 Q507	Q501 Q502 Q503 Q508	Q802	Q804 Q803 Q105 Q101 Q211 Q212	

Main P.C.Board (2/2)

To Main P.C.Board (1/2)



IC103

1	PS	15	7.4V
2	PS	16	0.7V
3	PS	17	3.8V
4	2.1V	18	3.6V
5	7.3V	19	2.1V
6	5.1V	20	2.1V
7	7.6V	21	7.6V
8	0V	22	7.6V
9	2.1V	23	2.1V
10	PS	24	2.1V
11	PS	25	PS
12	PS	26	PS
13	0V	27	PS
14	7.4V	28	0V

IC106

1	5V	12	PS
2	PS	13	PS
3	PS	14	PS
4	PS	15	PS
5	0V	16	5V
6	0V	17	0V
7	0V	18	0V
8	0V	19	PS
9	5V	20	PS
10	5V / 0V	21	PS
11	4.8V	22	PS

IC202

1	5V	11	0V
2	3.5V	12	0V
3	0V	13	PS
4	3.4V	14	PS
5	3.1V	15	PS
6	4.1V	16	PS
7	3.5V	17	PS
8	0V	18	5V
9	3.5V	19	5V
10	0V	20	5V

IC203

1	4.2V	5	3.4V
2	3.4V	6	3.4V
3	3.4V	7	4.2V
4	0V	8	7.7V

IC504

1	4.8V	5	0V
2	4.8V	6	0V
3	4.8V	7	0V
4	0V	8	5V

IC503

1	4.9V	9	PS
2	PS	10	0V
3	PS	11	4.9V
4	PS	12	PS
5	PS	13	PS
6	PS	14	0V
7	PS	15	4.9V
8	0V	16	4.9V

IC505

1	0V	9	4.9V
2	PS	10	0V
3	4.9V	11	4.6V
4	0V	12	0V
5	PS	13	4.9V
6	PS	14	4.4V
7	PS	15	0V
8	0V	16	4.9V

	E	C	B
Q101	13.02V	0V	12.96V
Q105	0V	12.98V	0V
Q211	0V	0V	0V
Q212	0V	0V	0V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	4.9V	PS	PS
Q504	4.86V	4.9V	0V
Q505	4.86V	4.86V	0V
Q506	0V	0V	0.6V
Q507	4.86V	12.86V	5.46V
Q508	7.31V	5.04V	6.68V
Q511	0V	5V	0V
Q512	0V	PS	PS
Q802	7.5V	13V	8.2V
Q803	0V	0V	5V
Q804	13V	13V	0V

IC506

1	PS
2	PS
3	PS
4	0V
5	2V
6	PS
7	PS
8	4.96V

IC701

1	0V
2	5V
3	5V
4	PS
5	NC
6	NC

<Measuring Conditions>

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Conditions : Test Disc Play (A-BEX TCD-782 Track No.2 1kHz)

CD Signal Line (Digital)
L-ch Signal Line
R-ch Signal Line
Focus Error Signal Line
Tracking Error Signal Line
Spindle Drive Signal Line
Sled Drive Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF=microfarads, pF=picofarads

Abbreviations

RES.=	Resistor	CAP.=	Capacitor
C.F.=	Carbon Film	ELY.=	Electrolytic
M.F.=	Metal Film	CER.=	Ceramic
M.O.=	Metal Oxide Film	MYL.=	Mylar
M.P.=	Metal Plate	TAN.=	Tantalum
TR.=	Transistor	POLY.=	Polystyrol
TRANS.=	Transformer	PP.=	Polypropylene
CP.=	Chip	PLT.=	Polyethylene
		PF.=	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25985W02	TC9236AF
IC102	51T25984W01	TA8191F
IC103	51T45577W02	BA6298FP
IC106	51T65109W01	SM5841CS
or	51T35105W02	SM5840CS
IC109	51T45285W02	SC7SU04F
IC202	51T35409W03	PCM67U
IC203	51T93337F01	NJM4560M
or	51T92001F11	BA4560F
or	51T92001F21	XRA4560F
IC501	51T45552W31	45552W31
IC502	51T45522W02	X24LC01SI
IC503	51T55070W04	MB88385APF
IC504	51T35308W01	M62007FP
IC505	51T25370W01	MC14538BFEL
IC506	51T73285F21	XRA10393F
IC507	51T45571W02	LB1836M

Transistors

Symbol No.	Part No.	Description
Q101	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q102	48T63420F01	CP., 2SA1037K
Q103	48T83417F03	2SB1237
Q105	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q111	48T94582F01	CP., 2SC4081
Q112	48T62967F09	CP., DTC114TK
or	48T64222F05	CP., UN2215
Q113	48T62967F09	CP., DTC114TK
or	48T64222F05	CP., UN2215
Q114	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q115	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q116	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q211	48T62967F33	CP., DTC343T
Q212	48T62967F33	CP., DTC343T
Q401	48T62967F02	CP., DTC114K
Q501	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q502	48T62967F04	CP., DTC144K
or	48T64222F03	CP., UN2213
Q503	48T62966F04	CP., DTA144
or	48T64221F03	CP., UN2113
Q504	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q505	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q506	48T63417F01	CP., 2SC2412K
Q507	48T83835F03	2SD1859
Q508	48T83417F03	2SB1237
Q511	48T62967F03	CP., DTC124K
Q512	48T62967F08	CP., DTC144W
Q802	48T35145W03	2SD2038
Q803	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q804	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112

Diodes / Switch

Symbol No.	Part No.	Description
D104	48T63462F01	CP., DAN202K
or	48T52446F01	CP., MA151WK
D501	48T63462F01	CP., DAN202K
D502	48T63463F01	CP., DAP202K
D504	48T63462F01	CP., DAN202K
or	48T52446F01	CP., MA151WK
D801	48T81044F01	10E2
ZD501	48T25766W03	Zener, HZS6A3L
ZD502	48T62934F22	Zener, CP. RD5.6MB2
ZD503	48T62934F34	Zener, CP. RD8.2MB2
ZD504	48T45012W35	Zener, MTZJ7.5A
ZD505	48T45012W35	Zener, MTZJ7.5A
ZD506	48T45012W29	Zener, MTZJ6.2A
ZD801	48T25766W20	Zener, HZS9A2L
S701	40T16358W03	Switch, SSSS9 (BUS)

Coil / Crystals

Symbol No.	Part No.	Description
L801	25T55309W01	Coil, Choke
X101	91T25806W92	16.9344MHz
X501	91T95076F07	CER. Lock, 8MHz
X502	91T25773W16	4MHz

Symbol No.	Part No.	Description	
Thermistor			
TH501	48T93439F06	100K ohm	
Capacitors			
C101	08S53332F57	CP.,	0.1μF
E101	23S61523F08	ELY.,	100μF / 6.3V
E102	23S61523F12	ELY.,	10μF / 16V
C103	08S65128F12	CP.,	10pF
E103	23S61523F12	ELY.,	10μF / 16V
C104	08S65128F12	CP.,	10pF
C105	08S65128F63	CP.,	3300pF
E105	23S61523F16	ELY.,	3.3μF / 25V
C106	08S65128F63	CP.,	3300pF
C107	08S65128F35	CP.,	100pF
E107	23T74437F11	TAN.,	10μF / 6.3V
C108	08S65128F69	CP.,	0.01μF
E108	23T74437F30	TAN.,	4.7μF / 16V
C109	08S65128F69	CP.,	0.01μF
E109	23T74437F09	TAN.,	4.7μF / 6.3V
C110	08S65128F69	CP.,	0.01μF
E110	23T74437F30	TAN.,	4.7μF / 16V
C111	08S65128F57	CP.,	1000pF
E111	23T74437F09	TAN.,	4.7μF / 6.3V
E112	23T74437F09	TAN.,	4.7μF / 6.3V
C113	08T15399W01	CP.,	0.022μF
E113	23T25149W13	ELY.,	100μF / 10V
C114	08S65128F64	CP.,	3900pF
C115	08T15807W05	CP.,	0.1μF
C116	08S65128F43	CP.,	220pF
C117	08S65128F62	CP.,	2700pF
E117	23S61523F28	ELY.,	0.47μF / 50V
C118	08T15399W03	CP.,	0.047μF
C119	08S65128F29	CP.,	56pF
C120	08S65128F69	CP.,	0.01μF
E120	23S61523F12	ELY.,	10μF / 16V
C121	08S65128F13	CP.,	12pF
E121	23S61523F12	ELY.,	10μF / 16V
C122	08S65128F69	CP.,	0.01μF
C123	08T15399W03	CP.,	0.047μF
C124	08S82122F06	CP.,	3pF
C126	08T15807W05	CP.,	0.1μF
C127	08T15807W05	CP.,	0.1μF
E128	23T74437F30	TAN.,	4.7μF / 16V
C129	08S65128F69	CP.,	0.01μF
C130	08S65128F65	CP.,	4700pF
C133	08S65128F69	CP.,	0.01μF
C140	08S65128F65	CP.,	4700pF
E141	23T74437F30	TAN.,	4.7μF / 16V
C142	08S65128F60	CP.,	1800pF
C143	08S65128F69	CP.,	0.01μF

Symbol No.	Part No.	Description	
C144	08S82122F21	CP.,	22pF
C150	08T15399W03	CP.,	0.047μF
C151	08T15399W03	CP.,	0.047μF
C152	08T15399W03	CP.,	0.047μF
C153	08T15399W03	CP.,	0.047μF
C155	08T15399W03	CP.,	0.047μF
E202	23T25149W09	ELY.,	10μF / 16V
E204	23T25149W09	ELY.,	10μF / 16V
E205	23T25149W12	ELY.,	47μF / 16V
E206	23T25149W09	ELY.,	10μF / 16V
C208	08S82122F23	CP.,	27pF
E213	23T25149W09	ELY.,	10μF / 16V
E214	23T25149W09	ELY.,	10μF / 16V
C215	08S65128F69	CP.,	0.01μF
E215	23T25149W10	ELY.,	22μF / 16V
C216	08S65128F69	CP.,	0.01μF
E216	23T25149W10	ELY.,	22μF / 16V
C224	08T55390W17	PF.,	0.01μF
C231	08T55390W05	PF.,	1000pF
C232	08T55390W05	PF.,	1000pF
C233	08T55390W15	PF.,	6800pF
C234	08T55390W15	PF.,	6800pF
C501	08T15399W03	CP.,	0.047μF
C502	08S53332F57	CP.,	0.1μF
C503	08S53332F57	CP.,	0.1μF
C504	08S53332F57	CP.,	0.1μF
E504	23S61523F29	ELY.,	1μF / 50V
C505	08S65128F28	CP.,	51pF
C506	08S65128F69	CP.,	0.01μF
C507	08S65128F49	CP.,	390pF
C508	08S53332F57	CP.,	0.1μF
C509	08S65128F28	CP.,	51pF
C510	08S65128F76	CP.,	0.1μF
E510	23S61523F12	ELY.,	10μF / 16V
C511	08S65128F76	CP.,	0.1μF
E511	23T25149W09	ELY.,	10μF / 16V
C512	08S65128F35	CP.,	100pF
C513	08S65128F69	CP.,	0.01μF
C514	08S65128F63	CP.,	3300pF
C586	08S65128F72	CP.,	0.022μF
C587	08S65128F72	CP.,	0.022μF
C588	08S65128F72	CP.,	0.022μF
C589	08S65128F72	CP.,	0.022μF
C590	08S65128F72	CP.,	0.022μF
C591	08S65128F72	CP.,	0.022μF
C592	08S65128F72	CP.,	0.022μF
E801	23T35463W28	ELY.,	1000μF / 16V
E802	23T00149L23	ELY.,	47μF / 16V
E803	23T25149W01	ELY.,	0.1μF / 50V
E804	23S61523F12	ELY.,	10μF / 16V
C805	08S53332F57	CP.,	0.1μF
E808	23S16086W02	ELY.,	330μF / 6.3V

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R102	06S64996F18	470K ohm
R103	06S64995F39	270 ohm
R105	06S64995F89	33K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F83	18K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F08	180K ohm
R124	06S64995F83	18K ohm
R125	06S64995F93	47K ohm
R126	06S64995F77	10K ohm
R127	06S64996F04	120K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64996F20	560K ohm
R135	06S64996F02	100K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F81	15K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06S70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F47	560 ohm
R146	06S64995F81	15K ohm
R147	06S64995F97	68K ohm
R148	06S64995F89	33K ohm
R150	06S64995F29	100 ohm
R151	06S64995F29	100 ohm
R167	06S64996F04	120K ohm
R169	06S64995F53	1K ohm
R170	06S64995F53	1K ohm
R171	06S64995F53	1K ohm
R172	06S64995F53	1K ohm

Symbol No.	Part No.	Description
R173	06S64995F45	470 ohm
R175	06S64995F45	470 ohm
R179	06S64995F63	2.7K ohm
R180	06S64995F77	10K ohm
R181	06S64995F85	22K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R192	06S64995F77	10K ohm
R194	06S64995F53	1K ohm
R195	06S64995F53	1K ohm
R196	06S64995F45	470 ohm
R217	06S64995F60	2K ohm
R218	06S64995F60	2K ohm
R225	06S64995F93	47K ohm
R226	06S64995F93	47K ohm
R227	06S64995F21	47 ohm
R228	06S64995F21	47 ohm
R501	06S64995F37	220 ohm
R502	06S64995F57	1.5K ohm
R503	06S64995F57	1.5K ohm
R505	06S64996F02	100K ohm
R506	06S64995F43	390 ohm
R507	06S64995F83	18K ohm
R508	06S64995F83	18K ohm
R509	06S64995F89	33K ohm
R510	06S64995F45	470 ohm
R511	06S64995F89	33K ohm
R512	06S64995F93	47K ohm
R513	06S64995F77	10K ohm
R514	06S64995F77	10K ohm
R515	06S70072F90	1 ohm 1/4W
R516	06S64996F10	220K ohm
R517	06S64995F53	1K ohm
R520	06S64995F75	8.2K ohm
R521	06S64996F14	330K ohm
R522	06S64996F26	1M ohm
R523	06S64996F18	470K ohm
R533	06S64995F85	22K ohm
R534	06S64995F85	22K ohm
R535	06S64995F93	47K ohm
R536	06S64995F93	47K ohm
R541	06S64995F93	47K ohm
R542	06S64995F37	220 ohm
R550	06S64995F69	4.7K ohm
R560	06S64995F69	4.7K ohm
R561	06S64995F69	4.7K ohm
R562	06S64995F69	4.7K ohm
R563	06S64995F69	4.7K ohm

Symbol No.	Part No.	Description
R564	06S64995F69	4.7K ohm
R565	06S64995F69	4.7K ohm
R566	06S70072F34	160 ohm 1/4W
R567	06S70072F34	160 ohm 1/4W
R568	06S70072F34	160 ohm 1/4W
R569	06S70072F34	160 ohm 1/4W
R570	06S64995F61	2.2K ohm
R571	06S64995F61	2.2K ohm
R573	06S64995F87	27K ohm
R574	06S64995F81	15K ohm
R575	06S64995F77	10K ohm
R576	06S64995F93	47K ohm
R578	06S64995F93	47K ohm
R579	06S64995F93	47K ohm
R580	06S64995F77	10K ohm
R581	06S64995F77	10K ohm
R590	06S64995F29	100 ohm
R591	06S64995F29	100 ohm
R592	06S64995F29	100 ohm
R603	06S64996F02	100K ohm
R604	06S64995F93	47K ohm
R703	06S64995F77	10K ohm
R704	06S64995F77	10K ohm
R801	06S70072F41	330 ohm
R812	06S70072F13	22 ohm 1/4W
VR101	18T91059F20	Variable, 150K ohm
VR102	18T45241W14	Variable, 15K ohm
VR103	18T45241W09	Variable, 2.2K ohm

Connector P. C. Board

IC

IC701	51T45264W01	TOTX193K

Capacitors

C205	08S65128F35	CP.,	100pF
C840	08S53332F57	CP.,	0.1μF

Resistors (All resistors are chip 1/4W±5% unless otherwise noted.)

R229	06S70072F05	10 ohm
R230	06S70072F05	10 ohm
R840	06S64995F75	8.2K ohm1/10W

Switch P. C. Board

LED's

LD401	48T84017F02	CP., BG1102W (GRN)
LD402	48T84017F02	CP., BG1102W (GRN)

Switch

S401	40T45327W01	Tact, SKQHFB (EJECT)

Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)

R401	06S64995F30	110 ohm
R402	06S64995F21	47 ohm

Miscellaneous

ET801	01T55619W02	Assy., DIN Connector (8P)
HD101	88T15309W01	Pick-Up Unit, SF-87.5
LD101	48T16057W01	LED, AN501 (RED)
LD102	48T16057W01	LED, AN501 (RED)
LD103	48T16057W01	LED, AN501 (RED)
M101	59T90879F01	Motor, Load 6V-260mA (LOADING)
M102	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)
M103	59T52973F03	Motor, Servo 6V-210mA (SLED)
PI101	48T15722W01	Photo Interrupt, GP1S51
PT101	48T15938W05	Transistor, Photo PS5022-B1
PT102	48T15938W05	Transistor, Photo PS5022-B1
PT103	48T15938W04	Transistor, Photo PS5022
Q1003	48T51089F04	Transistor, 2SA937
S102	40T71025F01	Switch, Detector (LOADING)
S103	40T71025F01	Switch, Detector (HOME POSITION)
S104	40T71025F01	Switch, Detector (MAGAZINE)
S105	40T71025F01	Switch, Detector (LIMIT)

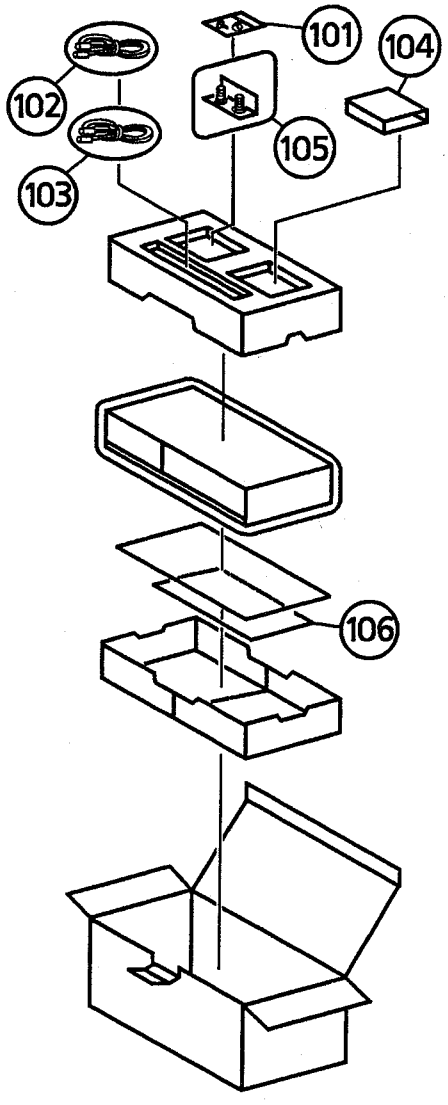
Packing Assembly Parts List

Symbol No.	Part No.	Description
101-1	03D40121T46	Bolt, Hex. W/Double Washer (M4×6)
101-2	02B47353F06	Nut, Hex. Flange (M6)
101-3	03B90962F03	Bolt, Hex. Flange (M6×50)
101-4	02A44071U02	Nut, Wing (M6)
101-5	04S40071G22	Washer, Spring (M6.1)
101-6	03S63857F05	Screw, Tapping (M5×15)
102	01T55561W34	Assy., DIN connector
103	01T55642W01	Assy., DIN connector
104	01C00113K01	Assy., Magazine
or	01B41058W01	Assy., Magazine

Symbol No.	Part No.	Description
	105	01B50968W02	Assy., Bracket
○	106-1	68P60141W99	Owner's Manual
△	106-1	68P60141W90	Owner's Manual
	106-2	47A60241W01	Shaft, Renew

Notes : ○ : For North American Model Only, △ : For General Foreign Model Only,
Others : Common.

Packing Method View



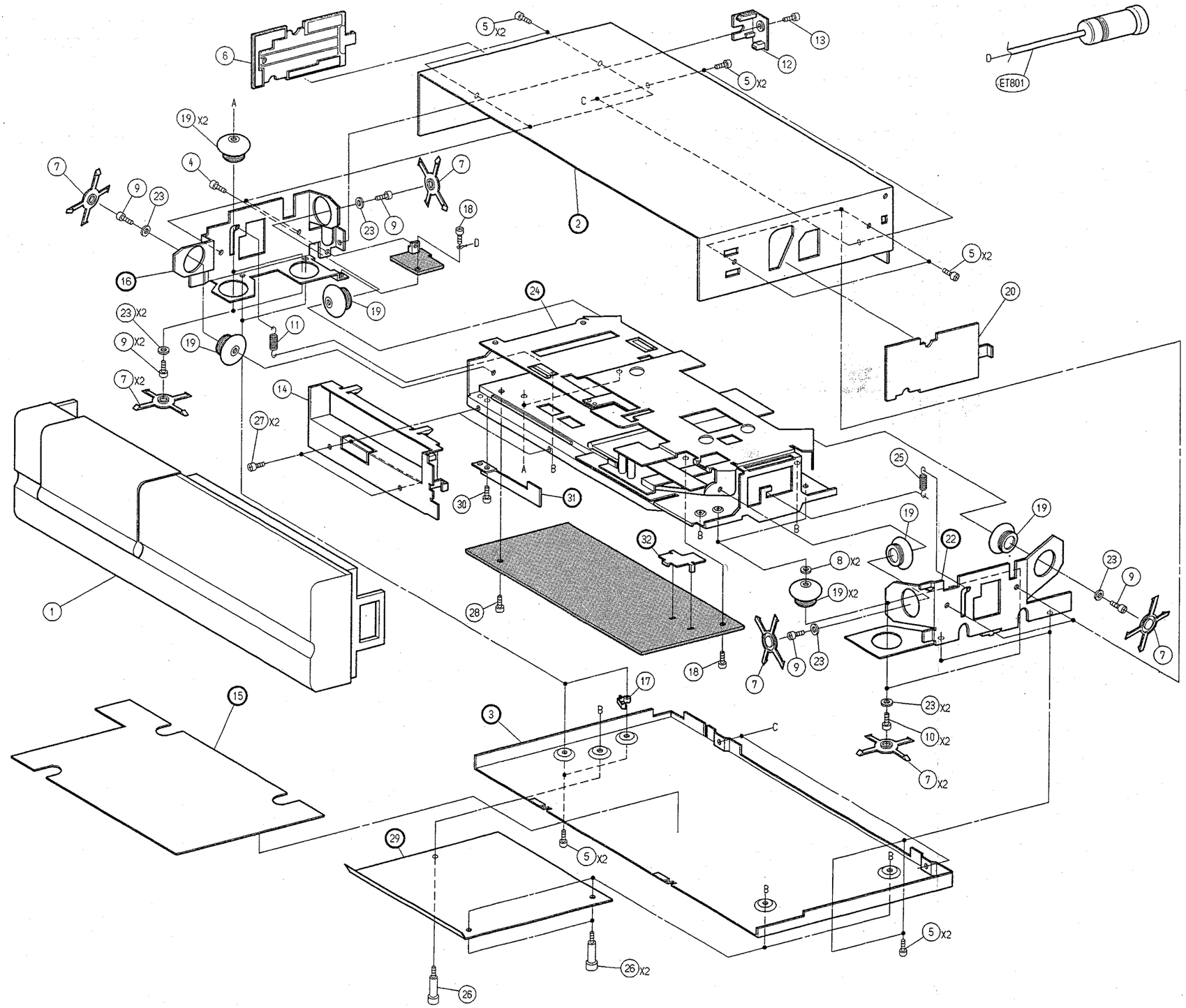
Cabinet Assembly Parts List

Note : No parts number on parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	4-B	13T45532W05	Assy., Front Escutcheon
4	2-B	03S70494F10	Screw, Pan (M2.6×10)
5		03S38013W12	Screw, Bind (M2.6×4)
6	1-C	15B41292W02	Cover, Plate (L)
7		15B40809W01	Holder, Damper (C)
8	3-E	15A50532W01	Spaser, Damper
9		03A48040W01	Screw, Damper (M2.6×3)
10	4-F	03A48040W02	Screw, Damper (M2.6×6)
11	2-C	41A41238W01	Spring, Extension (L)
12	1-E	15A41448W02	Cover, Connector
13	1-E	03S44205G34	Screw, Pan (M2.6×5)
14	3-C	64B41449W01	Assy., Plate Inner
17	4-E	15A41116W01	Holder, Wire
18		03S44205G48	Screw, Pan (M2.6×5)
19		75B48059W01	Damper, DR (D)
20	2-F	15B41293W02	Cover, Plate (R)
23		04S40075G60	Washer, Flat Metal (M3.2)
25	3-F	41A1238W02	Spring, Extention
26		03A48046W01	Screw, Transport (M4×22.5)
27	3-C	03S44205G98	Screw, Pan (M2.6×5)
28	4-D	03A38056W01	Screw, Special (M2.6×6)
30	3-D	03S40014G66	Screw, Pan (M2×3.5)

Symbol No.	Index	Part No.	Description

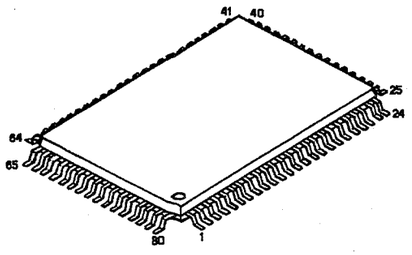
Exploded View (Cabinet)

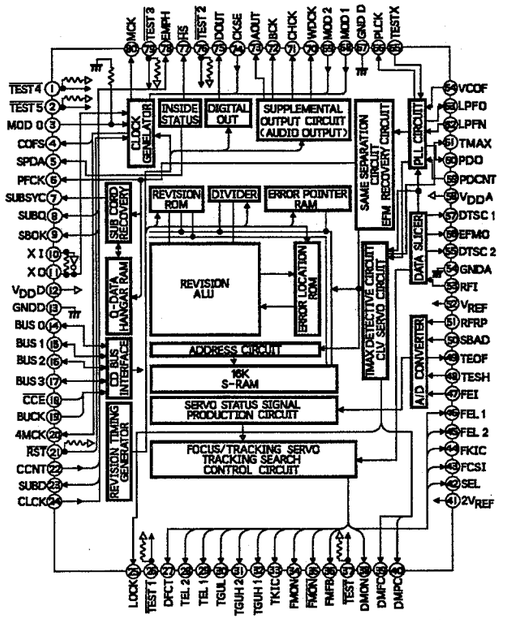


Semi - Conductor Lead Identifications

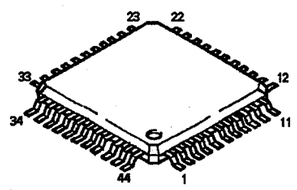
Note : The parts is not mentioned, refer to the Schematic Diagram.

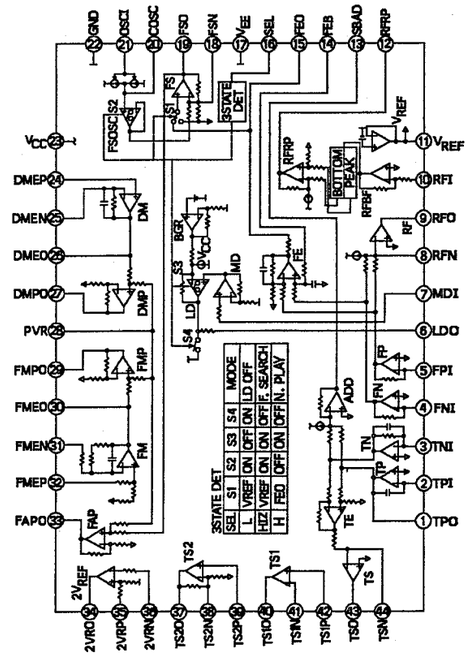
TC9236AF : IC101



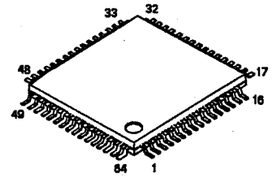


TA8191F : IC102





45552W31 : IC501



PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	SCL	O	23	GND	—	45	GND	—
2	SDA	I/O	24	GND	—	46	AV_{SS}	—
3	NC	—	25	$\overline{LMT-SW}$	I	47	HI-TEMP	I
4	NC	—	26	LOCK	I	48	LO-TEMP	I
5	NC	—	27	BUS 0	I/O	49	DISC-PH	I
6	NC	—	28	BUS 1	I/O	50	LOAD-PH	I
7	NC	—	29	BUS 2	I/O	51	DISC-OK	I
8	NC	—	30	BUS 3	I/O	52	$\overline{DISC-NO}$	I
9	GND	—	31	BUCK	O	53	BUS-SW	I
10	EJT-LED	O	32	$\overline{CCE}$	O	54	GND	—
11	NC	—	33	BUS-OUT	O	55	AV_{DD}	—
12	A-MUTE	O	34	BUS-DET	I	56	AV_{REF}	—
13	LOD M+	O	35	RESET	I	57	NC	—
14	LOD M−	O	36	BUS-IN	I	58	J-RESET	O
15	ELV M+	O	37	BATT	I	59	NC	—
16	ELV M−	O	38	ACC	I	60	J-RS	O
17	V-CONT	O	39	$\overline{EJT-KEY}$	I	61	J-R/W	O
18	F-CONT	O	40	V_{DD}	—	62	J-SIN	I
19	$\overline{LS-RST}$	O	41	X2	—	63	J-SOUT	O
20	$\overline{LOAD-SW}$	I	42	X1	—	64	J-SCLK	O
21	HOME	I	43	GND	—			
22	MAG-SW	I	44	NC	—			

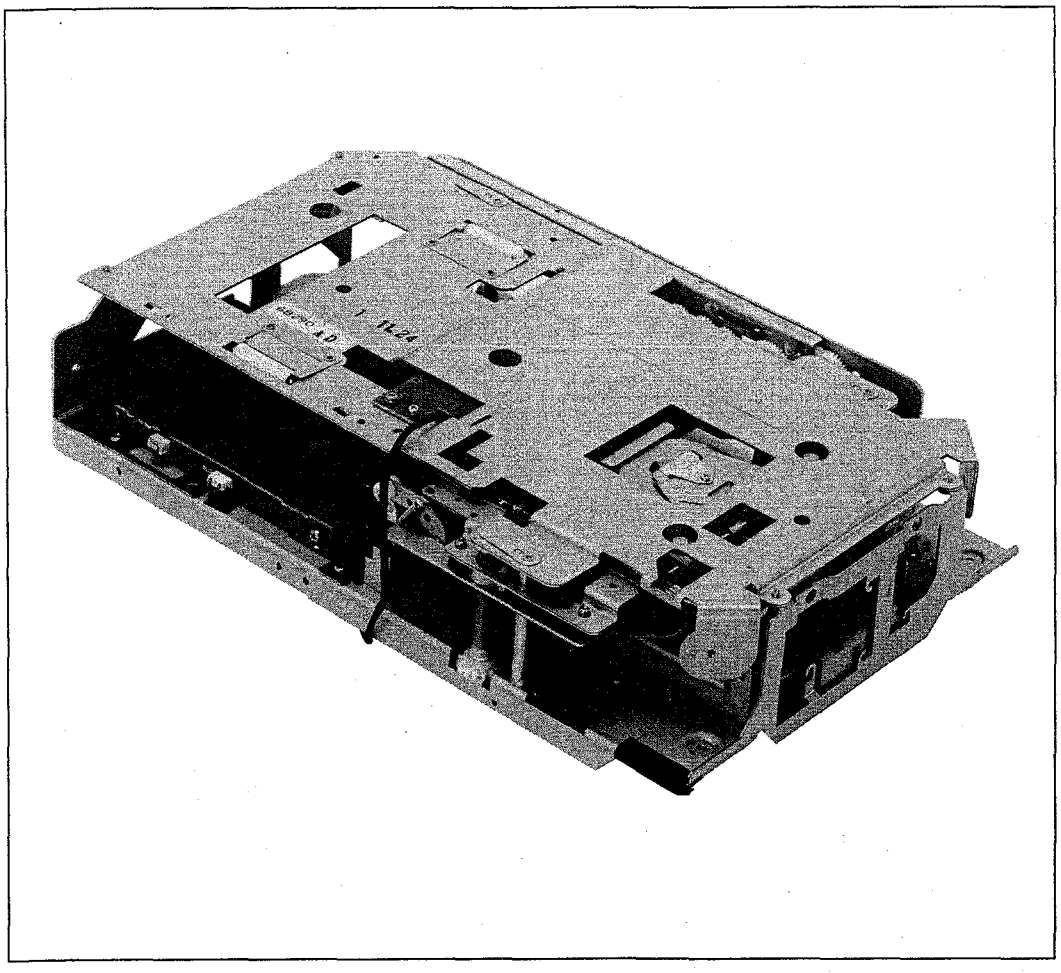
ALPINE®

SERVICE MANUAL

CD Remote Changer Mechanism
CD Shuttle

V27393

ADDENDUM & REVISED (II)



DR SERIES

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Disassembly Instructions

<DR24A010 Model Only>

1. Removal of Pick-up Unit

(1)Remove three screws marked "○" as shown in Figure 1.

2. Removal of Sled Motor

(1) After removal of the pick-up unit, remove the motor bracket with sled motor by removing the solder (A) and two screws marked "×" as shown in Figure 1.

(2) Remove the solder (B) and a screw marked "□" as shown in Figure 1.

3. Removal of Head Unit

(1) After removal of the motor bracket, remove the shaft bracket and the screw bracket by removing two screws marked "△" as shown in Figure 1.

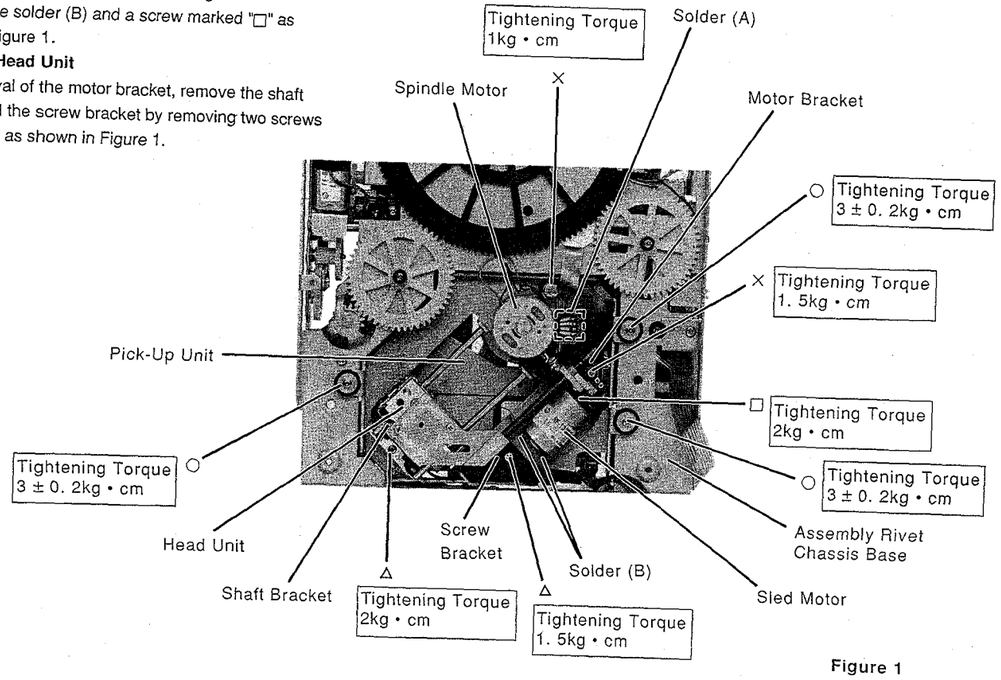

Figure 1

4. Removal of LED P. C. Board

(1) Remove two screws marked "●" as shown in Figure 2.

5. Removal of Switch P.C. Board

(1) Remove a screw marked "▲" as shown in Figure 2.

(2) Remove the hook (A) as shown in Figure 2.

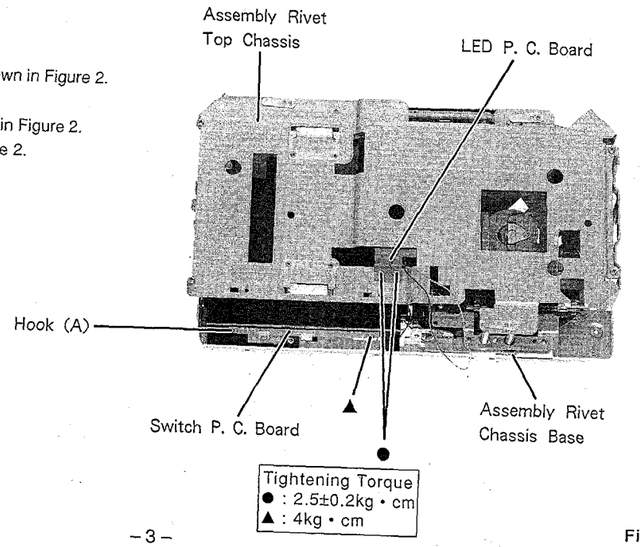

Figure 2

6. Removal of Assembly Rivet Chassis CR

(1) After Remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 3.

7. Removal of Photo P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 4.

(2) Remove a screw marked "■" as shown in Figure 4.

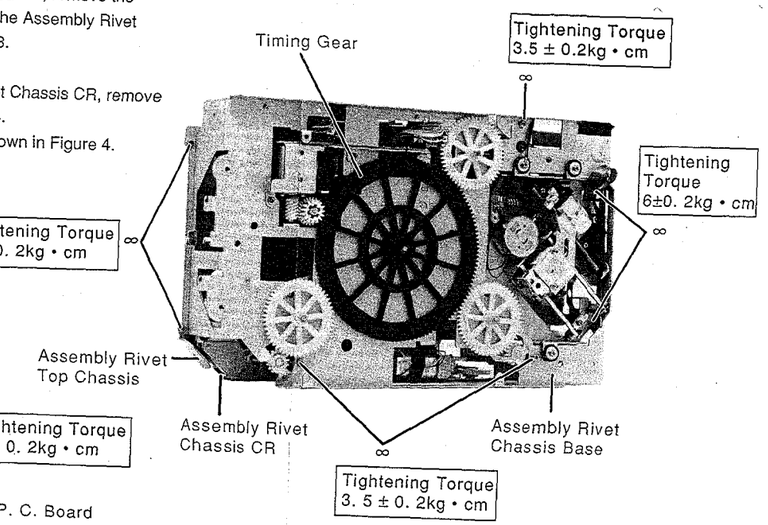

Figure 3

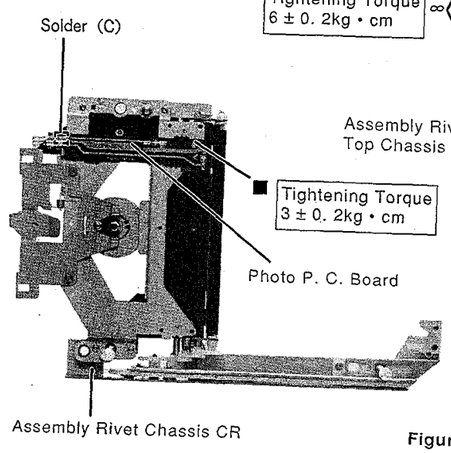

Figure 4

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (D) and (E) as shown in Figure 5.

(2) Remove two screws marked "☆" as shown in Figure 5.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) as shown in Figure 5.

(2) Remove two screws marked "★" as shown in Figure 5.

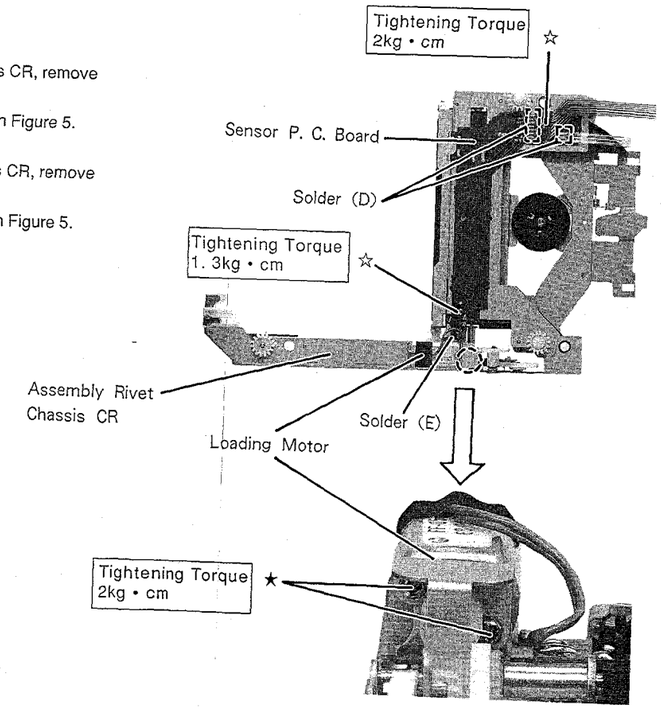

Figure 5

6. Removal of Assembly Rivet Chassis CR

(1) After Remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 3.

7. Removal of Photo P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 4.

(2) Remove a screw marked "■" as shown in Figure 4.

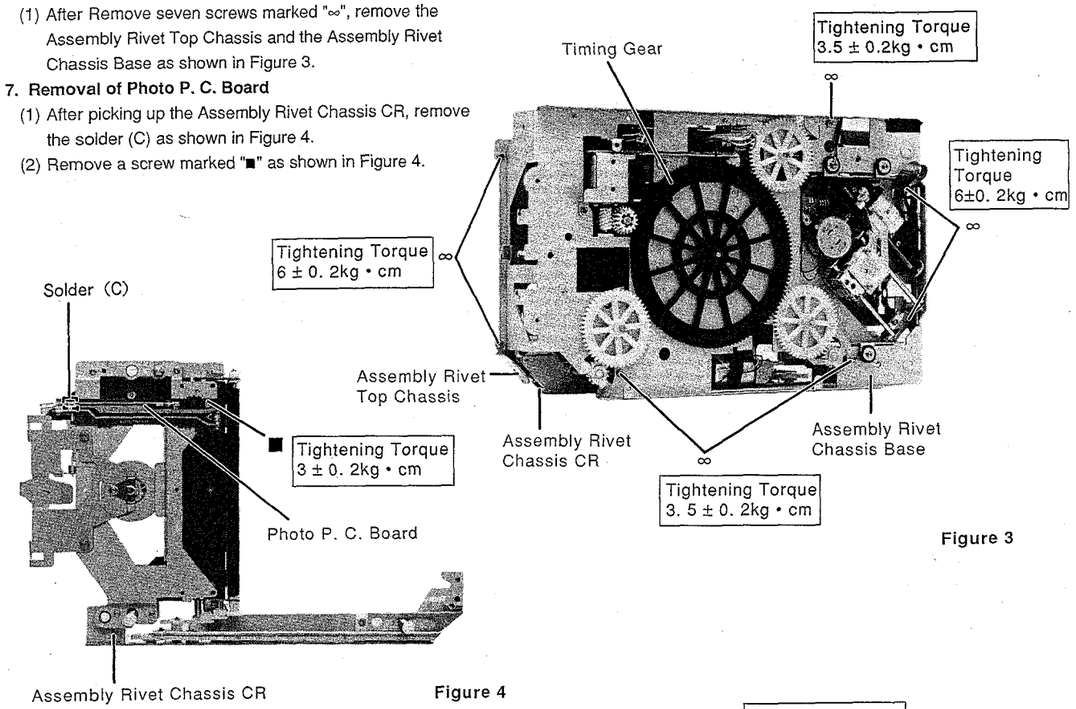

Figure 3

Figure 4

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (D) and (E) as shown in Figure 5.

(2) Remove two screws marked "☆" as shown in Figure 5.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) as shown in Figure 5.

(2) Remove two screws marked "★" as shown in Figure 5.

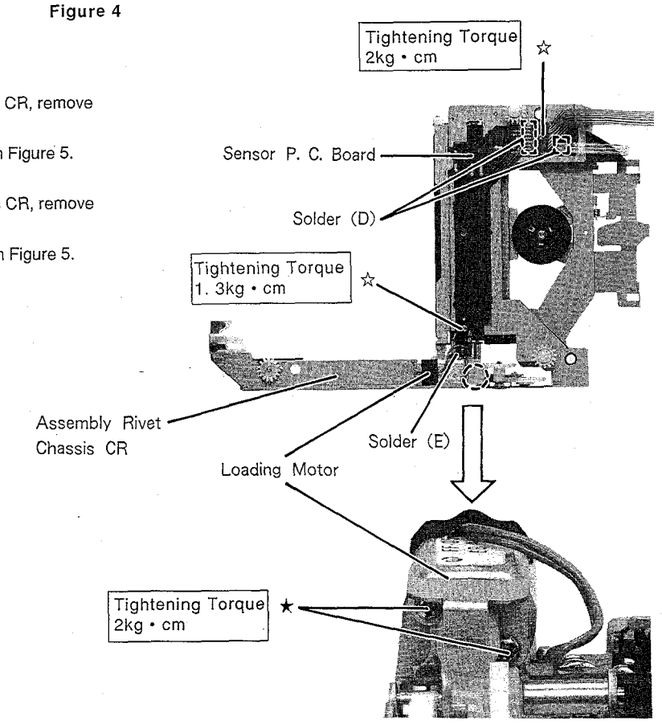

Figure 5

10. Removal of Elevator Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the washer (A) as shown in Figure 6.

(2) Remove the Assembly Rivet Bracket Motor by removing two screws marked "◇" as shown in Figure 6.

(3) Remove the solder (F) as shown in Figure 7.

(4) Remove tow screws marked "◆" as shown in Figure 6.

11. Removal of Interrupt P. C. Board

(1) After removal of the Assembly Rivet Bracket Motor, remove the solder (F) as shown in Figure 7.

(2) Remove two screws marked "#" as shown in Figure 7.

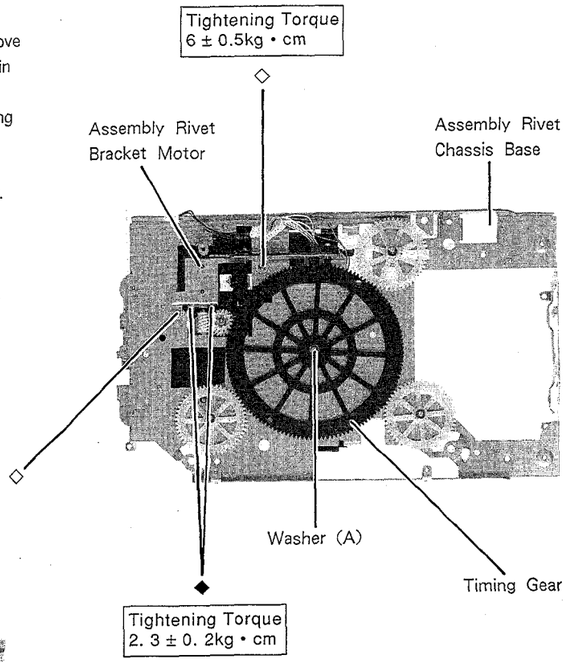

Figure 6

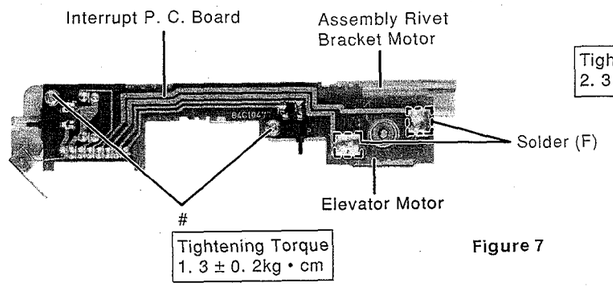

Figure 7

12. Removal of Magazine Photo P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the Assembly Rivet Chassis Magazine by removing three screws marked "※" as shown in Figure 8.

(2) Remove two screws marked "◎" as shown in Figure 8.

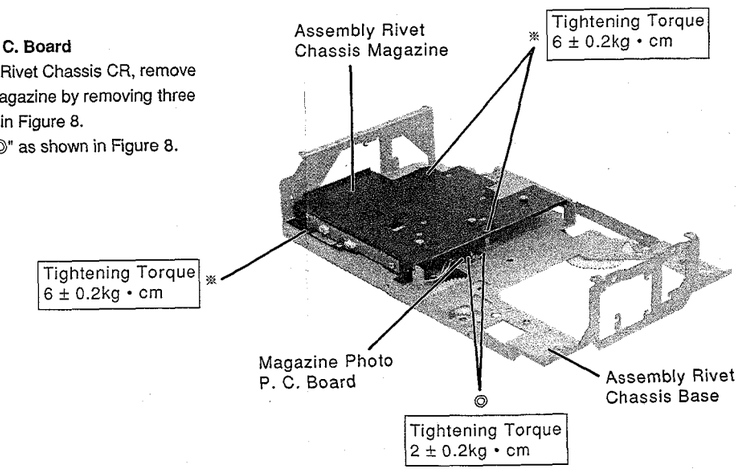

Figure 8

Disassembly Instructions

<DR24A020/02A/030/040 Model Only>

1. **Removal of Pick-Up Unit**
   (1) Remove three screws marked "○" as shown in Figure 9.
2. **Removal of Sled Motor**
   (1) After removal of the pick-up unit, remove the motor bracket with sled motor by removing the solder (A) and two screws marked "×" as shown in Figure 9.
   (2) Remove the solder (B) and a screw marked "□" as shown in Figure 9.
3. **Removal of Head Unit <DR24A020 Model Only>**
   (1) After removal of the motor bracket, remove the shaft bracket and the screw bracket by removing two screws marked "△" as shown in Figure 9.

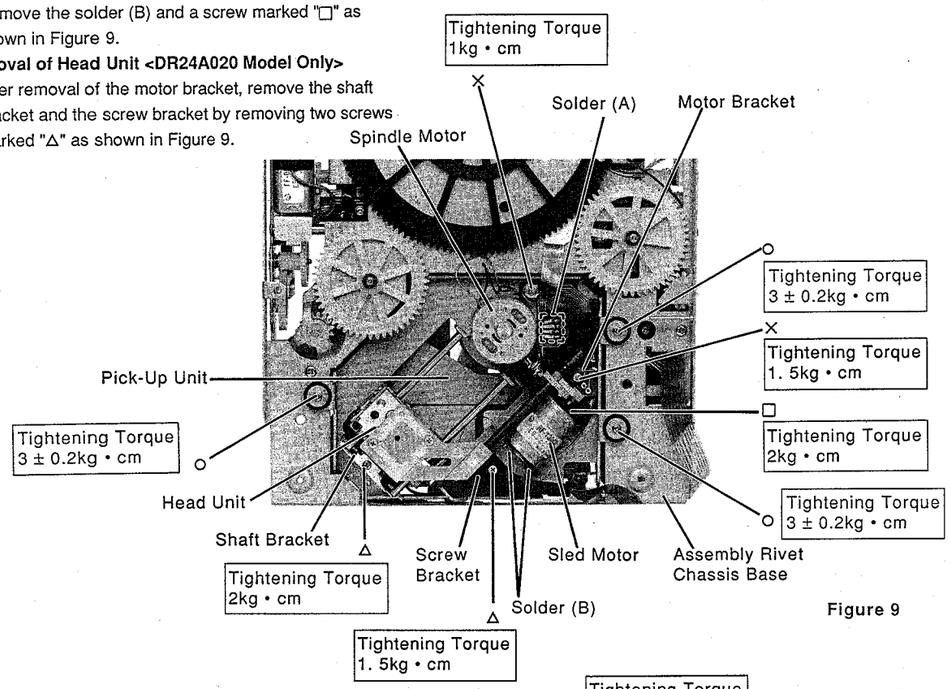

Figure 9

3. **Removal of Head Unit <DR24A02A/030/040 Model Only>**
   (1) After removal of the motor bracket remove the screw bracket by removing a screw marked "◉" as shown in Figure 10.
   (2) Remove four screws marked "⊗" and four shaft Stoppers as shown in Figure 10.

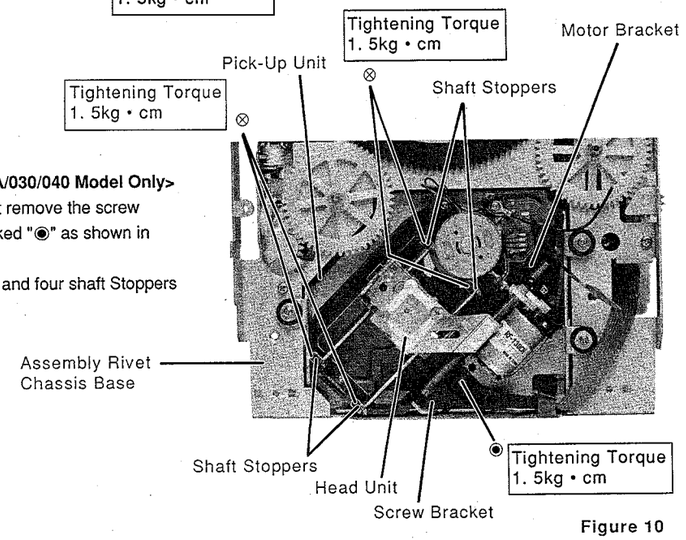

Figure 10

4. **Removal of Magazine Photo**
   (1) Remove a screw marked "●" as shown in Figure 11.
5. **Removal of Switch P. C. Board**
   (1) Remove a screw marked "▲" as shown in Figure 11.
   (2) Remove the Hook (A) as shown in Figure 11.

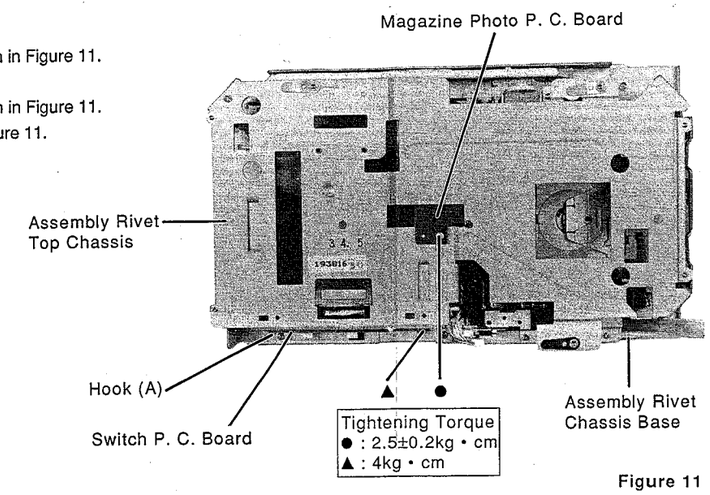

Figure 11

6. **Removal of Assembly Rivet Chassis CR**
   (1) After remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 12.
7. **Removal of LED P. C. Board**
   (1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 13.
   (2) Remove a screw marked "■" as shown in Figure 13.

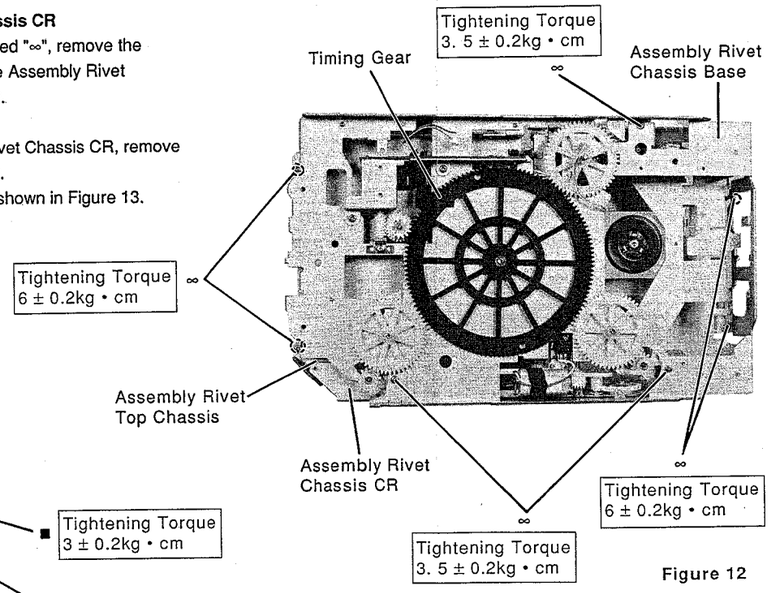

Figure 12

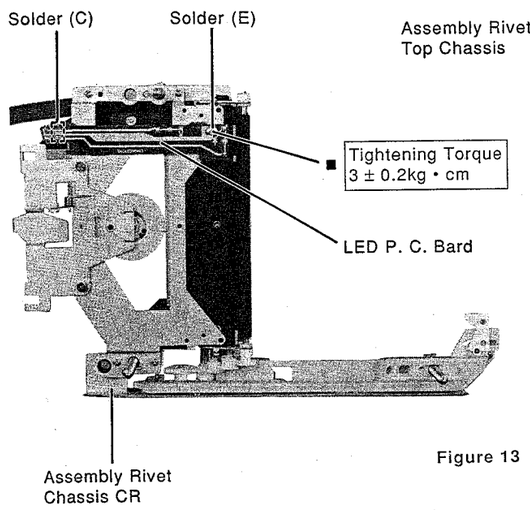

Figure 13

8. Remova
   (1) After r
   the so
   (2) Remo
   "☆" as
   Note: When
   damag
9. Remova
   (1) After r
   the so
   (2) Remo

10. Remov
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    the ti
    Figur
    (1) After
    the ti
    Figur
    (2) Remo
    two s
    (3) Remo
    (4) Remo

11. Remov
    (1) After
    remo
    (2) Remo

Tightening
1. 3 ± 0.2

#

Interrupt P.

4. Removal of Magazine Photo

(1) Remove a screw marked "●" as shown in Figure 11.

5. Removal of Switch P. C. Board

(1) Remove a screw marked "▲" as shown in Figure 11.

(2) Remove the Hook (A) as shown in Figure 11.

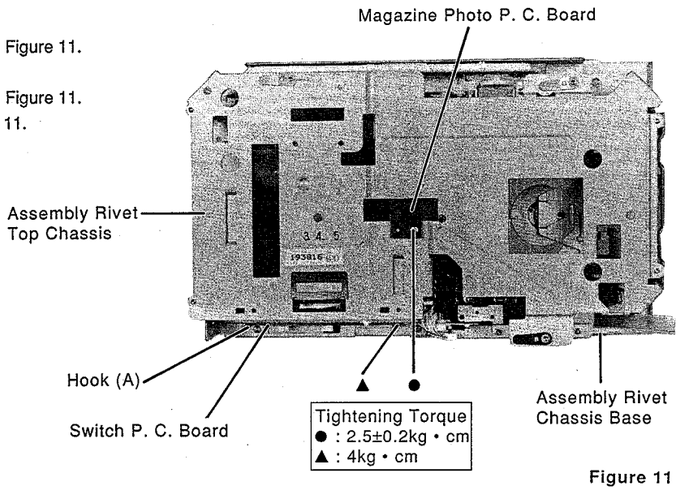


Figure 11

6. Removal of Assembly Rivet Chassis CR

(1) After remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 12.

7. Removal of LED P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 13.

(2) Remove a screw marked "■" as shown in Figure 13.

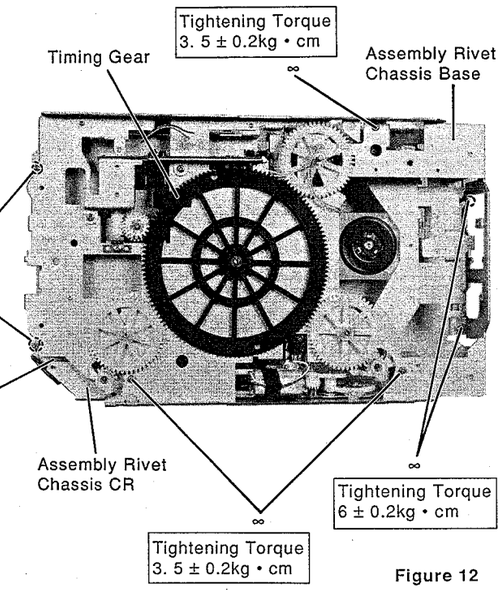


Figure 12

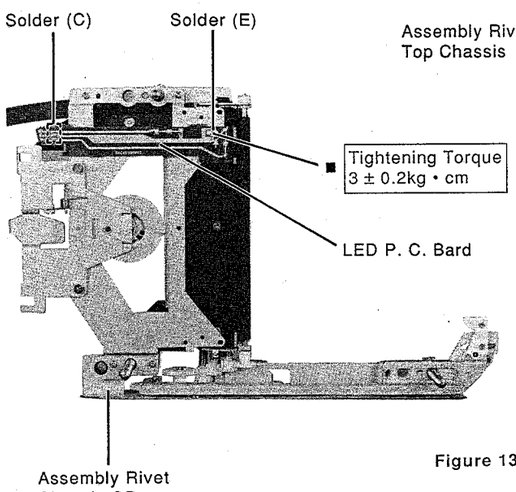


Figure 13

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) and (F) as shown in Figure 14.

(2) Remove Elevator Screw Shaft and two screws marked "☆" as shown in Figure 14.

Note: When removing the sensor P. C. Board, be careful not to damage the Photo-Transistor.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (F) as shown in Figure 14.

(2) Remove two screws marked "★" as shown in Figure 14.

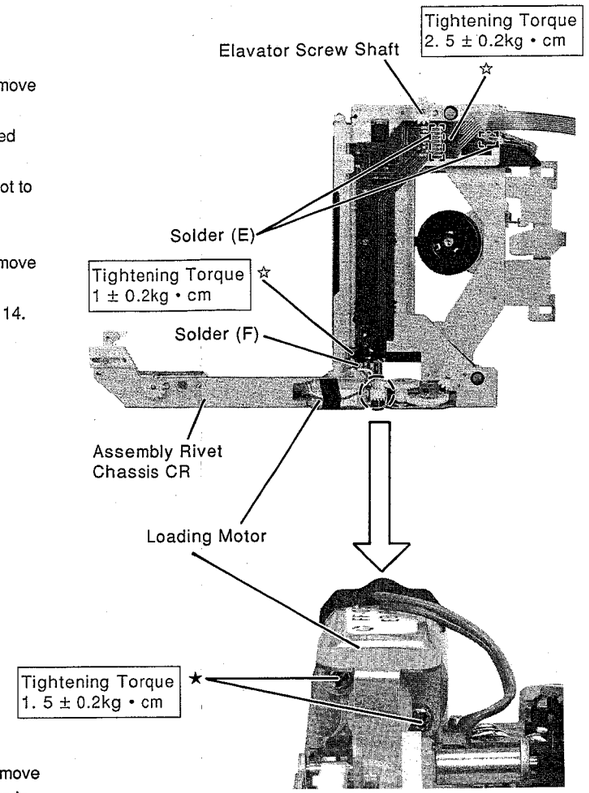


Figure 14

10. Removal of Elevator Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the washer (A) as shown in Figure 15. **<DR24A020/02A Model Only>**

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the Ring "E" as shown in Figure 15. **<DR24A030/040 Model Only>**

(2) Remove the Assembly Rivet Bracket Motor by removing two screws marked "◇" as shown in Figure 15.

(3) Remove the solder (G) as shown in Figure 16.

(4) Remove two screws marked "◆" as shown in Figure 15.

11. Removal of Interrupt P. C. Board

(1) After removal of the Assembly Rivet Bracket Motor, remove the solder (G) as shown in Figure 16.

(2) Remove two screws marked "#" as shown in Figure16.

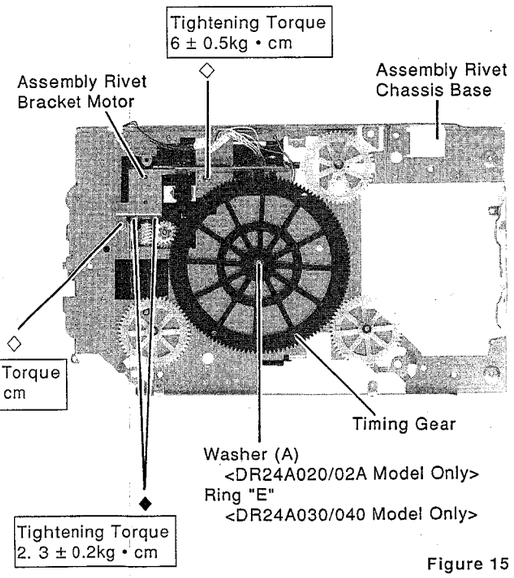


Figure 15

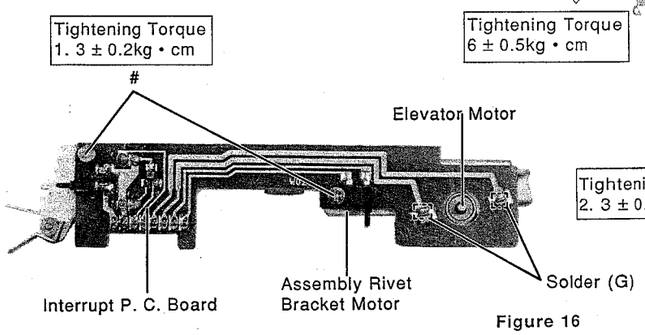


Figure 16

12. Removal of Magazine LED P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the Assembly Rivet Chassis Magazine by removing three screws marked "※" and the Hook (B) as shown in Figure 17.

(2) Remove a screw marked "◎" as shown in Figure 17.

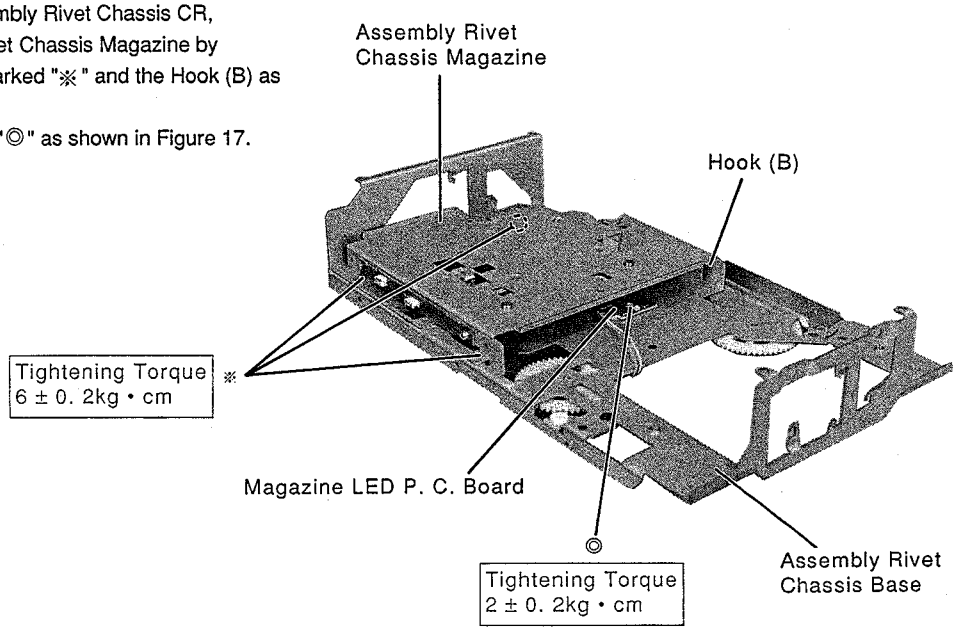


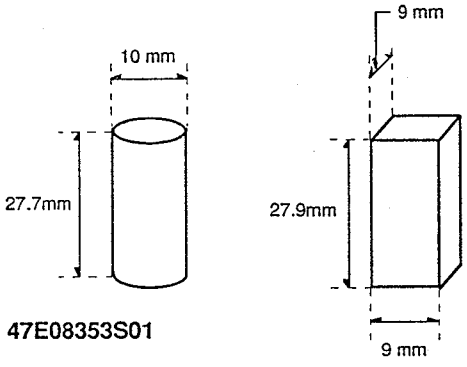
Figure 17

Adjusting method for Elevator Height

1. Remove two lock washers and a ring "E", than remove three gears (D).
2. Turn three gears (E) and move the CR chassis to F direction (to the position of CD magazine).
3. Insert the adjustment jig (☆) as shown in Figure 18 between the chassis and the CR chassis as shown in Figure 19.
   * At the same time, insert the adjustment jig near each of three gears (E).
4. Adjust each of gears (E) to minimum gap and to getting smooth moving of each adjustment jig.
5. Adjust the H hole of timing gear to fit with the hole of chassis.
6. Mount three gears (D).
   * At this time, pay attention that the position between the gear (E) adjusted and Timing gear does not make gap.
7. Fix three gears (D) with two lock washers and a ring "E".

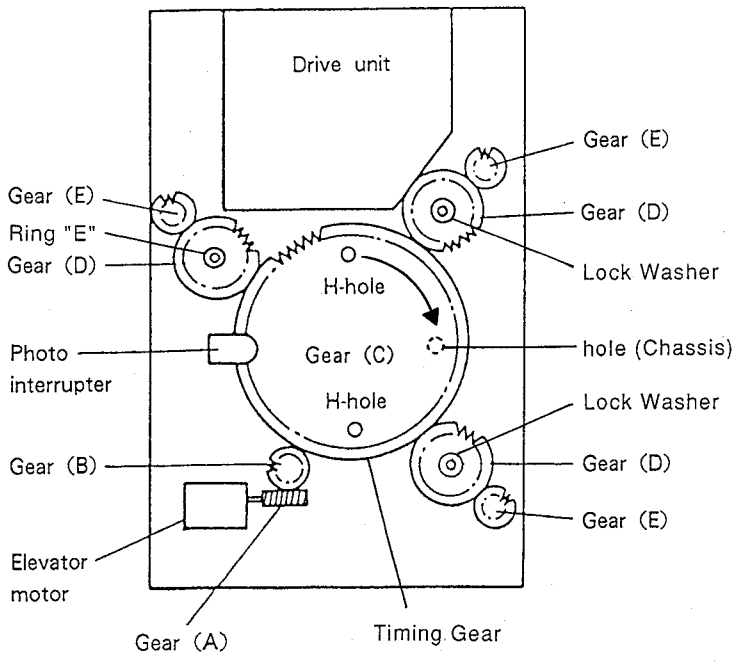
(☆) : 47E08353S01 (DR24A010 Model Only)
01V00346S01 (DR24A020/02A/030/040 Model Only)

Adjustment Jig



(Three pieces are supplied.)

Figure 18



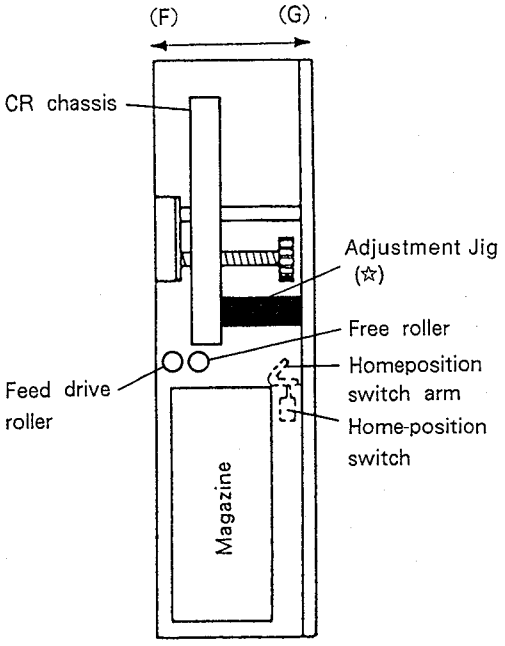


Figure 19

Mechanism Function Description

Function	Step	Description	Illustration
Magazine Insertion	①	When the magazine is inserted, the eject lever is pushed in.	Figure 20
	②	The eject lever causes the magazine lock arm to move.	
	③	The magazine lock arm causes the magazine to lock and the magazine lock switch to be switched on.	

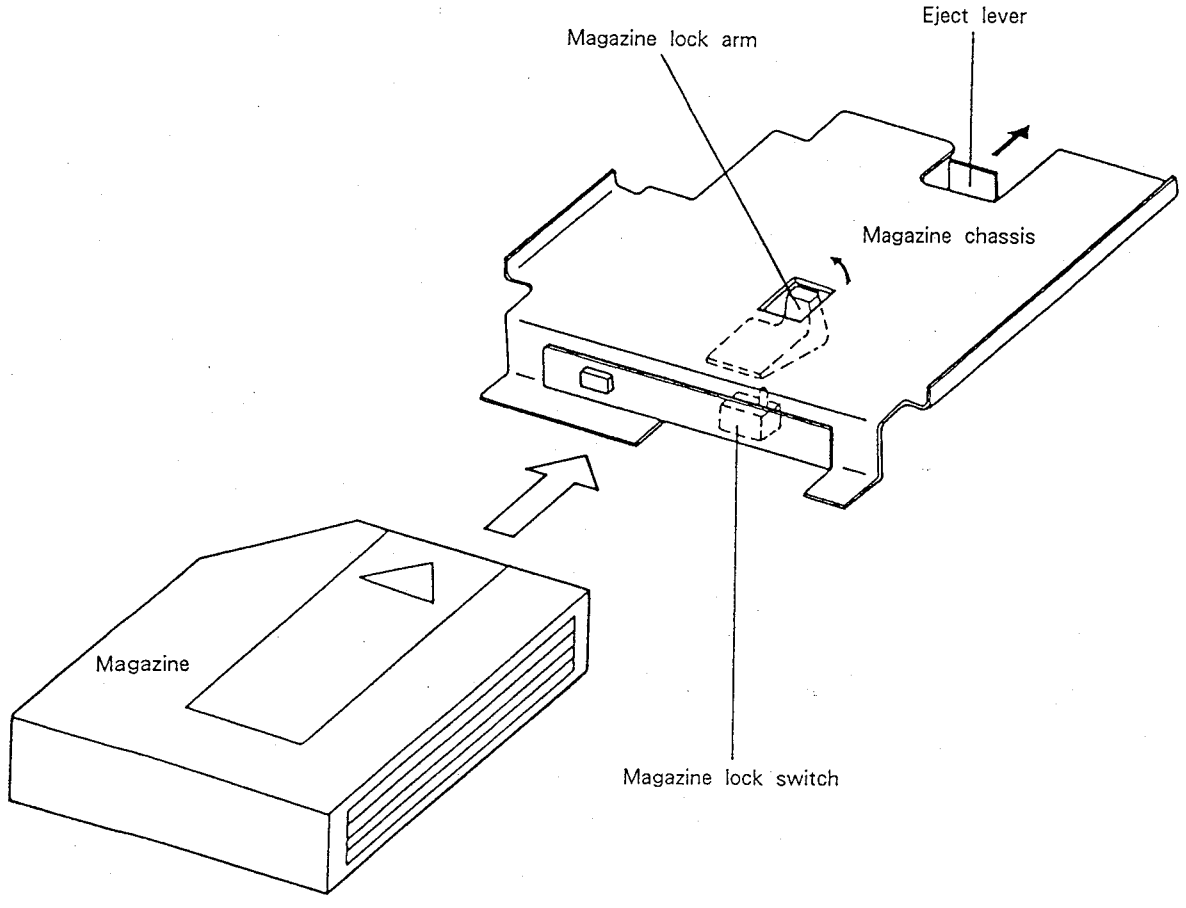


Figure 20

Function	Step	Description	Illustration
Disc Loading	①	The elevator motor rotates.	Figure 21
	②	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	③	The CR chassis is moved in the (F) direction by rotation of gear (E).	
	④	The photo-interrupter counts the H-holes on gear (C) to control the movement distance of the CR chassis.	
	⑤	The CR chassis is stopped at the position of the first disc in the magazine. * For the 2nd through 6th discs the movement distance of the CR chassis is the only thing that changes : the operation is the same.	
	⑥	The loading motor rotates. (The loading motor can rotate forward and in reverse.)	
	⑦	The rotation is transmitted to gears (I), (J), (K) and (L).	
	⑧	Simultaneous with the action of Step (7), the rotation is transmitted to gears (I), (J), (M), (N) and (O).	
	⑨	The rotation of gear (L) causes the disc eject lever to make a back-and-forth movement in the (P) and (Q) directions.	
	⑩	The disc eject lever causes the disc to be ejected from the magazine.	
	⑪	Since gear (O) and the feed drive roller are on the same axle, the rotation of gear (O) will cause the feed drive roller to rotate.	Figure 22
	⑫	The disc is sandwiched between the feed drive roller and the free roller and the disc moves in the direction of the clamper.	
	⑬	Photosensors (1), (2) and (3) are consecutively blocked by the disc and finally, only photosensor (3) is a blocked condition.	Figure 21
	⑭	The loading motor stops upon the judgment that the disc has entered.	
	⑮	The elevator motor rotates. (Rotation is in the opposite direction of Step (1). The elevator motor can rotate forward and in reverse.)	
	⑯	The rotation is transmitted to gears (A), (B), (C) and (D).	
	⑰	The rotation of gear (E) causes the CR chassis to move in the (G) direction.	
	⑱	The movement of the CR chassis causes the clamper to move and clamp the disc.	
	⑲	The movement of the CR chassis causes the home-position switch arm to move, and the home-position switch is switched on.	
	⑳	The photo-interrupter counts the H-holes on gear (C), and the elevator motor is stopped upon judgment that the CR chassis has reached the home position.	

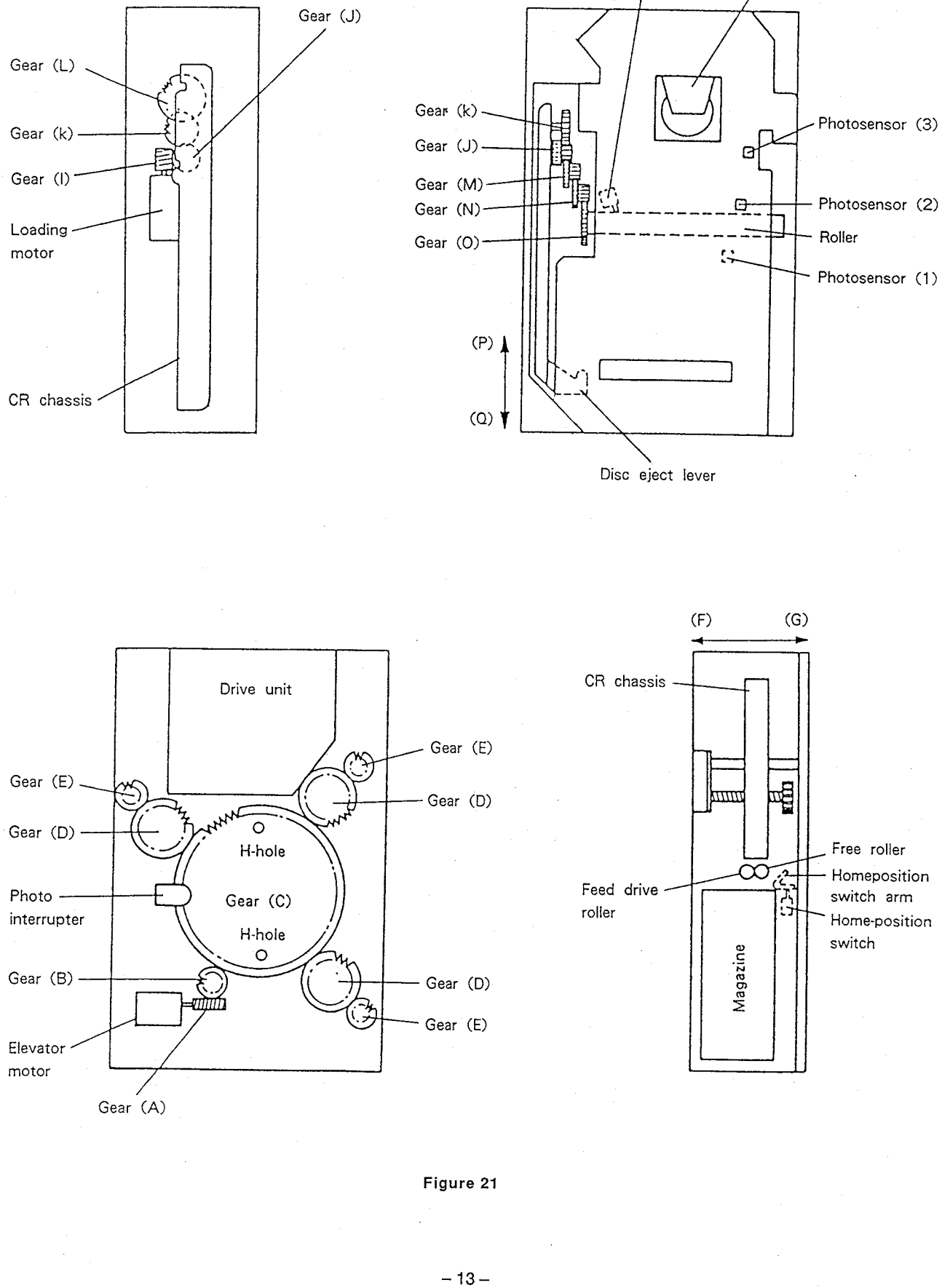

Gear (J)
Gear (L)
Gear (k)
Gear (I)
Loading motor
CR chassis
Loading arm switch
Clamper
Gear (k)
Gear (J)
Gear (M)
Gear (N)
Gear (O)
Photosensor (3)
Photosensor (2)
Roller
Photosensor (1)
(P)
(Q)
Disc eject lever
Drive unit
Gear (E)
Gear (D)
Gear (E)
Gear (D)
H-hole
Photo interrupter
Gear (C)
H-hole
Gear (B)
Gear (D)
Gear (E)
Elevator motor
Gear (A)
(F)
(G)
CR chassis
Free roller
Feed drive roller
Homeposition switch arm
Home-position switch
Magazine

Figure 21

Function	Step	Description	Illustration
Play	①	The spidle motor rotates the disc.	Figure 23
	②	The rotation of the sled motor is transmitted through the gears to the feed screw and causes the pickup to move.	
	③	The lead-in position of the disc is detected by the inner limit position switch and the reading of the disc data begins.	
Return of the disc to the magazine	①	The elevator motor rotates.	Figure 21
	②	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	③	The CR chassis is moved in the (F) direction by the rotation of gear (E).	
	④	The clamper is removed.	
	⑤	The photo-interrupter counts the H-holes on gear (C) to control the movement distance of the CR chassis.	
	⑥	The disc is sandwiched between the feed drive roller and the free roller.	
	⑦	The CR chassis is stopped at the position of the first disc in the magazine. * For the 2nd through 6th disc the movement distance of the CR chassis is the only thing that changes : the operation is the same.	
	⑧	The loading motor rotates.	Figure 24
	⑨	The rotation is transmitted to gears (I), (J), (M), (N) and (O).	Figure 21
	⑩	The rotation of gear (O) causes the feed drive roller to rotate and to move in the direction of the disc magazine.	
	⑪	Blockage of photosensor (3) by the disc is cancelled.	
	⑫	The movement of the disc blocks photosensors (2) and (1) and cancels the blocking.	
	⑬	The blocking of photosensor (1) is cancelled and the disc is judged to have been housed in the magazine.	
	⑭	The loading motor stops.	

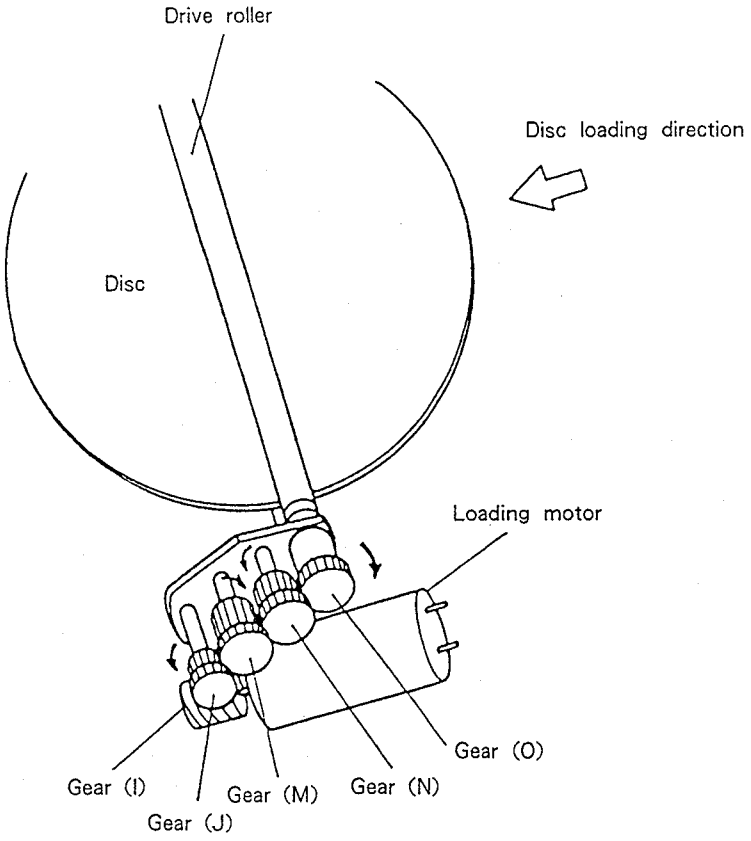


Figure 22

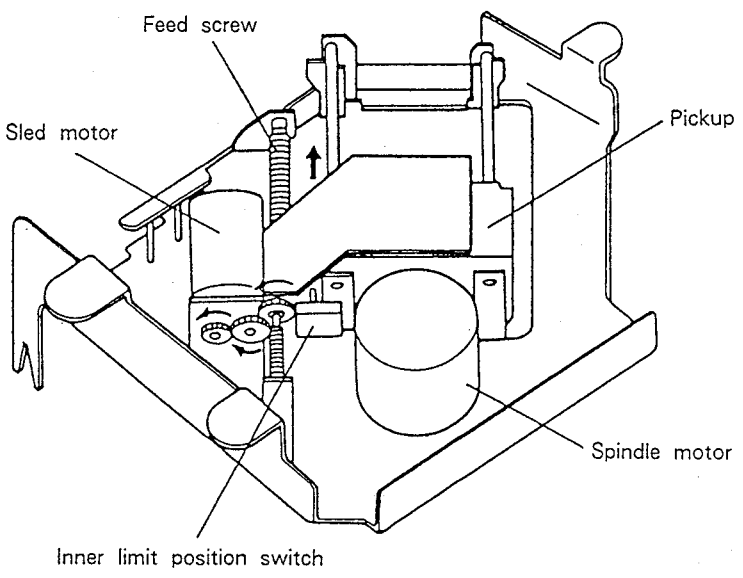


Figure 23

Function	Step	Description	Illustration
Magazine Ejection	①	Press the eject switch.	Figure 25
	②	The elevator motor rotates.	Figure 21
	③	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	④	The CR chassis is moved in the (G) direction by the rotation of gear (E).	
	⑤	The movement of the CR chassis causes the home-position switch arm to move, and the home-position switch is switched on.	
	⑥	The photo-interrupter counts the H-holes on gear (C), and the elevator motor is stopped upon judgment that the CR chassis has reached the home position.	
	⑦	The loading motor rotates.	
	⑧	The rotation is transmitted to gears (J), (K), and (L).	
	⑨	The rotation of gear (L) causes the disc eject lever to make a back-and-forth movement in the (P) and (Q) directions.	
	⑩	The disc eject lever causes the eject arm to move.	Figure 25
	⑪	The eject arm causes the eject lever to move, the magazine lock arm is released and the magazine is ejected.	
	⑫	The magazine lock switch is switched off and there is a judgment that the magazine has been ejected.	Figure 21

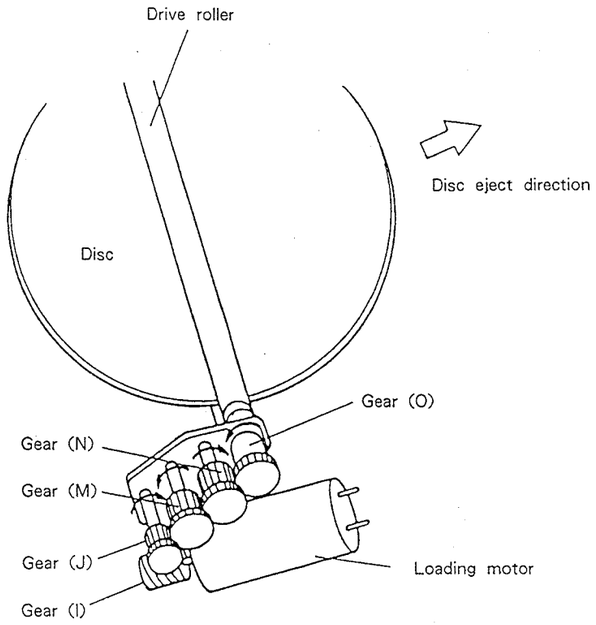


Figure 24

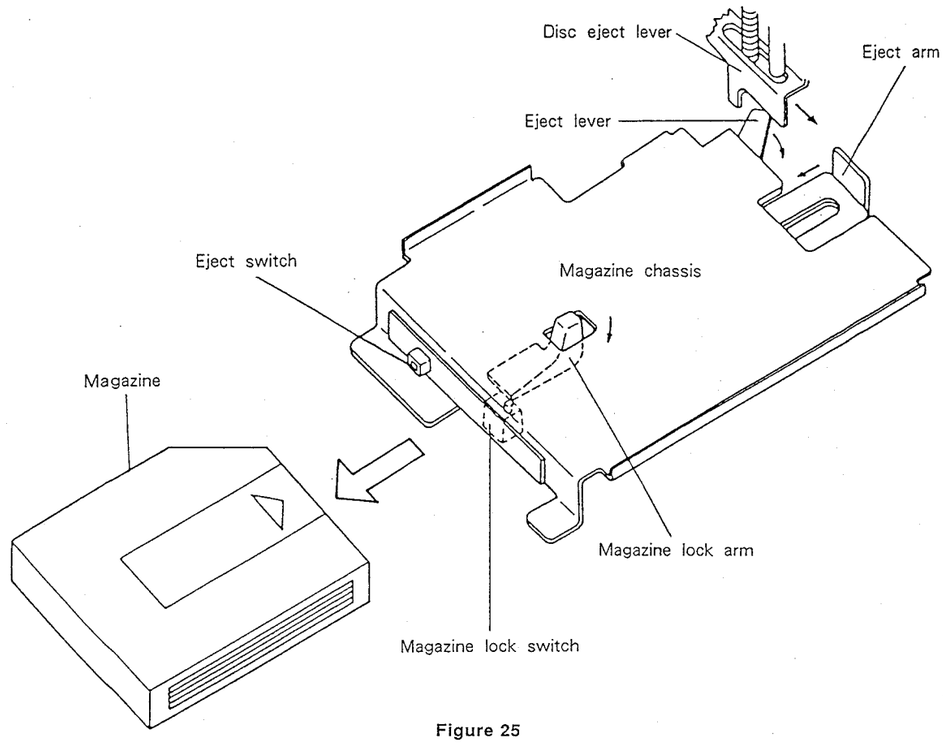
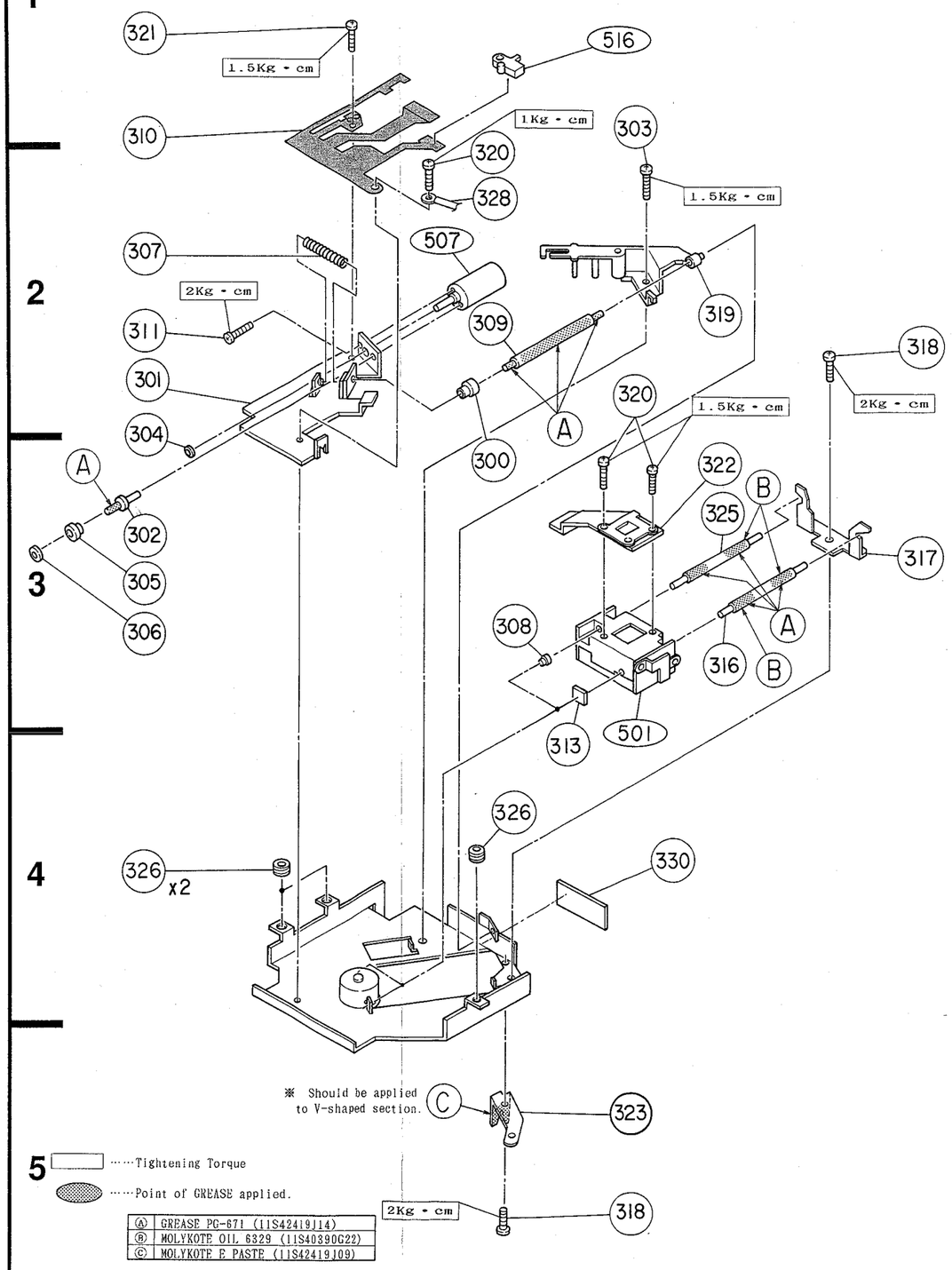


Figure 25

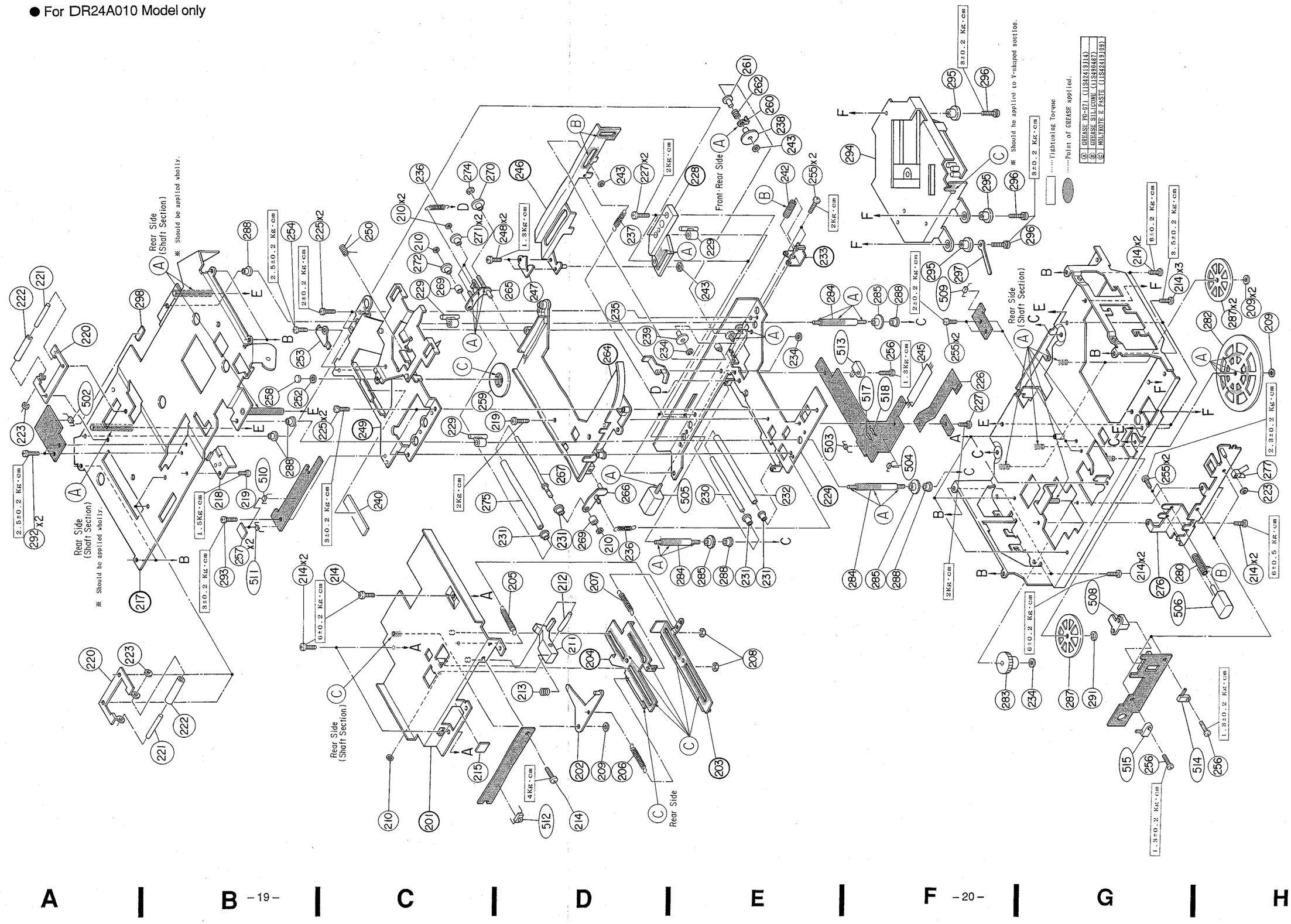
Exploded View (CD Mechanism) (1/2)

● For DR24A010 Model only



Exploded View (CD Mechanism) (2/2)

● For DR24A010 Model only



CD Mechanism Assembly Parts List

<For DR24A010 Model Only>

Symbol No.	Index	Part No.	Description
205	4-D	41B11514W04	Spring, Extension
206	5-D	41B11514W05	Spring, Extension
207	4-D	41B11514W06	Spring, Extension
208	4-E	04C42091G02	Ring, "E" (M3. 2)
209		04B41345P04	Washer, Lock (M2. 6)
210		04B41345P02	Washer, Lock (M1. 7)
211	4-D	45A11483W01	Arm, Lock Magazine
212	4-D	47A11405W01	Shaft, Arm Lock
213	4-D	41A11480W02	Spring, Compression
214		03S44205G30	Screw, Pan (M2. 6 X 4)
215	5-C	14S20875W87	Insulator, Cover
218	3-B	43A13109W01	Spacer, Magazine
219		03S44205G87	Screw, Pan (M2 X 4)
220		41A11425W01	Spring, M. Hold
221		47A11428W01	Roller, M. Hold
222		47A11429W01	Shaft, Roller
223		04B41345P01	Washer, Lock (M1. 2)
225		03S40014G15	Screw, W/Washer (M2 X 8)
226	3-F	84T11243W01	FPC Elevator P. C. Board
227		03S40014G61	Screw, W/Washer (M2 X 5)
229		45A11284W01	Arm, Elevator
230	3-E	47A11273W01	Shaft, Roller Under
231		43A11272W01	Bush, Roller
232	3-E	75A11925W01	Rubber, Roller
234		04B41345P13	Washer, Lock (M1. 7)
235	2-D	01A11565W01	Assy., Rivet Arm Switch DL
236		41B11514W08	Spring, Extension
237	2-D	41B11514W02	Spring, Extension
238	2-E	44A11481W01	Gear, Lever Middle
239	3-D	44B22139W01	Gear, Lever
240	3-C	75A96179F01	Sheet, Support Disc
242	2-E	44A11281W01	Worm
243		04B41345P22	Washer, Lock (M2. 6)
245	3-F	30T73687F17	Parallel, Wire (3P)
247	2-D	45A11441W01	Arm, Block A Magazine
248	2-D	03S94385F01	Screw, Pan (M1. 7 X 2. 3)
250	2-C	41A11559W01	Spring, Torsion
252	3-B	04B41345P24	Washer, Lock (M2. 1)
253	3-B	07A11468W01	Plate, Top
254	2-B	03S44205G94	Screw, Pan (M1. 7 X 2)
255		03S40014G62	Screw W/Washer (M2 X 3)
256		03S10042W06	Screw, Pan (M2 X 7)
257	4-B	75S72374F97	Cushion, Rubber
258	3-B	43A41006F01	Spacer, Polyslider
259	3-C	01A31486W01	Assy., Rivet Clamper
260	1-E	45A31789W01	Arm, Kick Gear
261	1-E	43A11485W01	Bush, Gear
262	1-E	41A11480W01	Spring, Compression
265	2-D	01A11566W01	Assy., Rivet Arm Roller
266	3-D	01A11567W01	Assy., Rivet Arm Roller (R)
267	3-D	47A11274W01	Shaft, Roller
269		47A11302W01	Roller, Lifter
270	2-C	44A11278W01	Worm
271	2-C	44A11279W01	Gear, Roller Middle
272	2-C	44A11280W01	Gear, Loading Roller
274	2-C	04C42091G06	Ring, "E" (M1. 5)
275	3-C	75A11925W01	Rubber, Roller
277	3-H	45A11265W01	Arm, Switch HP
280	4-G	44A11276W01	Worm
282	2-H	44B11283W01	Gear, Timing
283	4-F	44A11275W01	Worm Wheel
284		47A12135W01	Shaft, Screw Elevator
285		44A11277W01	Gear, Screw
287		44B11282W01	Gear, Idle
288		43A11271W01	Bearing, Screw Elevator
291	4-G	04C42091G11	Ring, "E" (M2. 5)
292	4-A	03S94385F09	Screw, Pan (M2 X 3)
293	4-B	03S44205G99	Screw, Bind (M2 X 3)
294	2-F	01V21800W05	Assy., Drive Unit
295		43A12211W01	Sleeve, Cushion

NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
296		03S38013W10	Screw, Pan (M2 X 7)		
297	2-F	29C41045P09	Lug, Wrap Around		
298	2-A	75A20928W01	Rubber, Top Chassis		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		
303	1-C	03S40014G07	Screw, W/Washer (M2 X 4)		
304	2-A	44A90996F01	Gear, Motor		
305	3-A	44A90997F01	Gear, Middle		
306	3-A	04B41345P02	Washer, Lock (M1. 7)		
307	2-A	41A10928W03	Spring, Shaft-150		
308	3-B	43A13508W01	Spacer, Shaft		
309	2-B	47A10927W01	Shaft, Screw		
310	1-A	84T15149W01	FPC Actuate P. C. Board		
311	3-A	03S40014G66	Screw, W/Washer (M2 X 3. 5)		
313	4-C	75A21138W01	Sheet, Shaft		
316	3-C	47A20146W01	Shaft, Pick-Up-50°		
317	3-D	07A10921W01	Bracket, Shaft		
318		03S40014G62	Screw, W/Washer (M2 X 3)		
319	2-C	07B10923W01	Bracket, Screw		
320		03D40121T38	Screw, W/Double Washer (M2 X 5)		
321	1-A	03S40014G69	Screw, W/Washer (M2 X 8. 5)		
322	3-C	41C10925W02	Spring, Nut		
325	3-C	47A21175W01	Shaft, Pick-Up -50°(B)		
326		75A12210W01	Rubber, Cushion		
328	2-B	01T70458F02	Assy., GND Wire		
330	4-C	14S81482F10	Insulator, Cover		

Symbol No.	Index	Part No.	Description		
Miscellaneous					
501	3-C	88T15309W01	Pick-Up SF-87. 5		
502	3-A	48T16057W01	LED, AN501 (RED)		
503	3-E	48T16057W02	LED, AN501-B1 (RED)		
504	3-F	48T16057W02	LED, AN501-B1 (RED)		
505	3-E	59T90879F01	Motor, Load 6V-260mA (LOADING)		
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
507	2-C	59T52973F03	Motor, Servo 6V-210mA (SLED)		
508	4-G	48T15722W01	Interrupter Photo, GP1S51		
509	2-F	48T15938W02	TR., Photo PS5022		
510	3-B	48T15938W02	TR., Photo PS5022		
511	4-B	48T15938W02	TR., Photo PS5022		
512	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
513	3-E	40T71025F01	Switch, Detector (LOADING)		
514	5-H	40T71025F01	Switch, Detector (HOME POSITION)		
515	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
516	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

CD Mechanism Assembly Parts List

<For DR24A020 Model Only>

Symbol No.	Index	Part No.	Description
205	4-D	41B11514W04	Spring, Extension
206	5-D	41B11514W05	Spring, Extension
207	4-D	41B11514W06	Spring, Extension
208	4-E	04B41345P39	Washer, Lock (M3. 5)
209		04B41345P04	Washer, Lock (M2. 6)
210		04B41345P02	Washer, Lock (M1. 7)
211	4-D	45A11483W01	Arm, Lock Magazine
212	4-D	47A11405W01	Shaft, Arm Lock
213	4-D	41A11480W02	Spring, Compression
214		03S44205G30	Screw, Pan (M2. 6 X 4)
215		04C42091G06	Ring, "E" (M1. 5)
218		03S44205G99	Screw, Bind (M2 X 3)
219	3-C	03S44205G87	Screw, Pan (M2 X 4)
220		43A11271W01	Bearing, Screw Elevator
221		44B11282W01	Gear, Idle
222		44A11277W01	Gear, Screw
223		04B41345P01	Washer, Lock (M1. 2)
225		03S38013W07	Screw, Pan (M2 X 8. 5)
226	3-F	84T11243W01	EPC Elevator P. C. Board
227		03S44205G95	Screw, Bind (M2 X 4)
229		45A11284W01	Arm, Elevator
230	3-E	01A40510W01	Assy., Shaft Roller Under
231		43A11272W01	Bush, Roller
232	4-G	04C42091G11	Ring, "E" (M2. 5)
233		47A12135W01	Shaft, Screw Elevator
234		04B41345P13	Washer, Lock (M1. 7)
235	3-D	01A11565W01	Assy., Rivet Arm Switch
236		41B11514W08	Spring, Extension
237	2-D	41B11514W02	Spring, Extension
238	2-E	44A11481W01	Gear, Lever Middle
239	2-E	44B22139W01	Gear, Lever
240	4-F	41A31495W01	Spring, Elevator
242	2-E	44A11281W01	Worm
243	2-E	04B41345P22	Washer, Lock (M2. 6)
245	3-F	30T73687F17	Wire, Parallel (3P)

Symbol No.	Index	Part No.	Description
247	2-D	45A11441W01	Arm, Block A Magazine
248	2-D	03S94385F01	Screw, Pan (M1.7 X 2. 3)
250	2-C	41A11559W01	Spring, Torsion
252	3-B	04B41345P24	Washer, Lock (M2. 1)
253	3-B	07A31787W01	Plate, Top
254	2-B	03S44205G94	Screw, Pan (M1.7 X 2)
255		03S40014G62	Screw, W/Washer (M2 X 3)
256		03S10042W06	Screw, Pan (M2 X 7)
257	2-G	29C41045P09	Lug, Wrap Around
258	3-B	43A41006F01	Spacer, Polyslider
259	3-C	01A31782W01	Assy., Rivet Clamper
260	2-E	45A31789W01	Arm, Kick Gear
261	2-E	43A11485W01	Bush, Gear
262	2-E	41A11480W01	Spring, Compression
265	2-D	01A31779W01	Assy., Rivet Arm Roller (L)
266	3-D	01A31780W01	Assy., Rivet Arm Roller (R)
267	3-D	01A40509W01	Assy., Shaft Roller
268	4-F	44A11275W01	Worm, Wheel
269		47A11302W01	Roller, Lifter
270	2-C	44A11278W01	Worm
271	2-C	44A11279W01	Gear, Roller Middle
272	2-C	44A11280W01	Gear, Loading Roller
273		03S38013W10	Screw, Pan (M2 X 7)
274	2-G	44B11283W01	Gear, Timing
275		43A12211W01	Sleeve, Cushion
277	3-H	45A31790W01	Arm, Switch HP
278	2-F	01V21800W05	Assy., Drive Unit
280	4-G	44A11276W01	Worm
282	3-C	43A41006F01	Spacer, Polyslider
283		03S40014G12	Screw, W/Washer (M2.6 X 4)
284		41A11425W01	Spring, M. Hold
285		47A11428W01	Roller, M. Hold
286		47A11429W01	Shaft, Roller
287		03S44205G96	Screw, Bind (M2 X 5)
300	3-B	44A90998F01	Gear, Screw
301	2-A	07C10922W02	Bracket, Motor
302	3-A	46A91007F02	Stud, Gear
303	2-C	03S40014G07	Screw, W/Washer (M2 X 4)
304	2-A	44A90996F01	Gear, Motor
305	3-A	44A90997F01	Gear, Middle

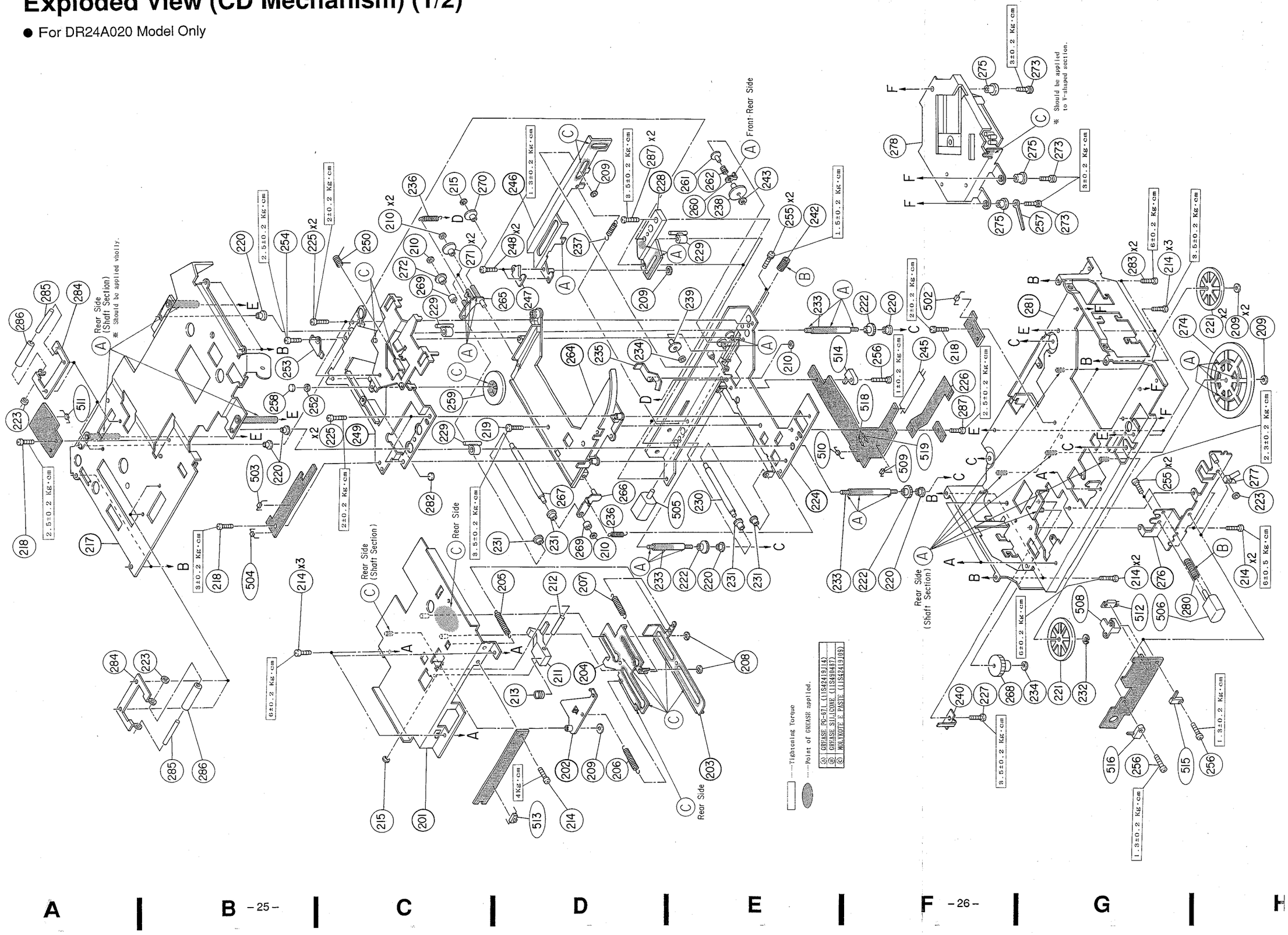
NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
306	3-A	04B41345P02	Washer, Lock (M1. 7)		
307	2-A	41A10928W03	Spring, Shaft-150		
308	3-B	43A13508W01	Spaceer, Shaft		
309	2-B	47A10927W01	Shaft, Screw		
310	2-A	84T15149W01	FPC Actuate P. C. Board		
311	2-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)		
312	2-B	01T70458F02	Assy., GND Wire		
313	4-C	75A21138W01	Sheet, Shaft		
315		75A12210W01	Rubber, Cushion		
316	3-C	47A20146W01	Shaft, Pick-Up-50°		
317	3-D	07A10921W01	Bracket, Shaft		
318		03S40014G62	Screw, W/Washer (M2 × 3)		
319	2-C	07B10923W01	Bracket, Screw		
320		03D40121T38	Screw, W/Double Washer (M2 × 5)		
321	1-B	03S40014G69	Scerw, W/Washer (M2 × 8. 5)		
322	3-C	41C10925W02	Spring, Nut		
324	3-C	47A21175W01	Shaft, Pick-Up-50° (B)		
325	4-C	14S81482F10	Insulator, Cover		
Miscellaneous					
501	4-C	88T15309W01	Pick-Up Unit SF-87. 5		
502	2-F	48T16057W01	LED, AN501 (RED)		
503	3-B	48T16057W01	LED, AN501 (RED)		
504	4-B	48T16057W01	LED, AN501 (RED)		
505	3-D	59T90879F01	Motor, Load 6V-260mA (LOADING)		
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
507	2-B	59T52973F03	Motor, Servo 6V-210mA (SLED)		
508	4-G	48T15722W01	Interrupter, Photo GP1S51		
509	3-F	48T15938W03	Transistor, Photo PS5022-B1		
510	3-E	48T15938W03	Transistor, Photo PS5022-B1		
511	3-A	48T15938W02	Transistor, Photo PS5022		
512	4-G	48T51089F04	Transistor, 2SA937		
513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
514	3-E	40T71025F01	Switch, Detector (LOADING)		
515	5-G	40T71025F01	Switch, Detector (HOME POSITION)		
516	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
517	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

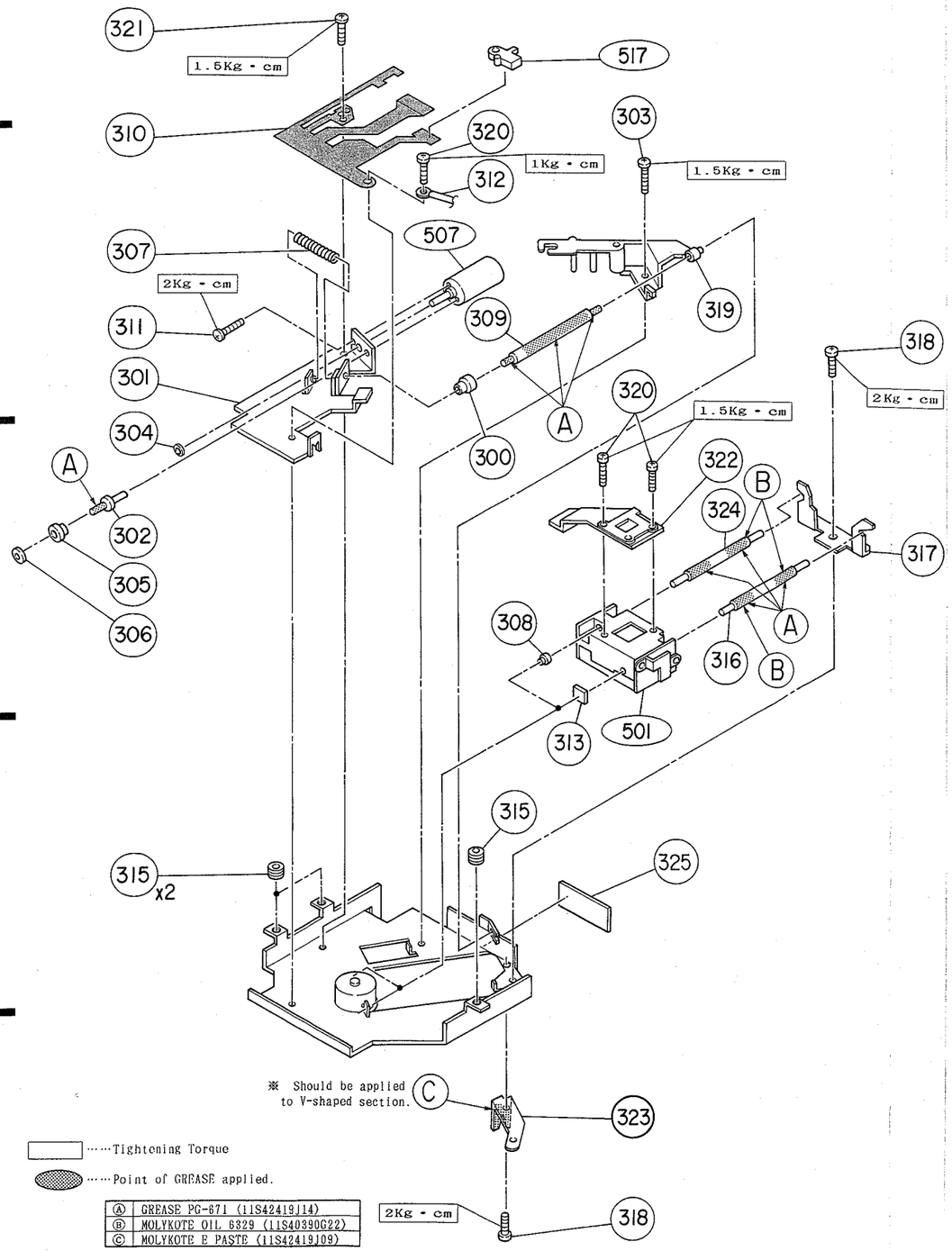
Exploded View (CD Mechanism) (1/2)

● For DR24A020 Model Only



Exploded View (CD Mechanism) (2/2)

● For DR24A020 Model only



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CD Mechanism Assembly Parts List

<For DR24A02A/030/040 Model Only>

Symbol No.	Index	Part No.	Description
205	4-D	41B11514W04	Spring, Extension
206	5-D	41B11514W05	Spring, Extension
207	4-D	41B11514W06	Spring, Extension
208	4-E	04B41345P39	Washer, Lock (M3. 5)
209		04B41345P04	Washer, Lock (M2. 6)
210		04B41345P02	Washer, Lock (M1. 7)
211	4-D	45A11483W01	Arm, Lock Magazine
212	4-D	47A11405W01	Shaft, Arm Lock
213	4-D	41A11480W02	Spring, Compression
214		03S44205G30	Screw, Pan (M2. 6 × 4)
215		04C42091G06	Ring, "E" (M1. 5)
218		03S44205G99	Screw, Bind (M2 × 3)
219	3-C	03S44205G87	Screw, Pan (M2 × 4)
220		43A11271W01	Bearing, Screw Elevator
221		44B11282W01	Gear, Idle
222		44A11277W01	Gear, Screw
223	3-H	04B41345P01	Washer, Lock (M1. 2)
225		03S38013W07	Screw, Pan (M2 5 8. 5)
226	3-F	84T11243W01	EPC Elevator P. C. Board
227	4-F	03S44205G95	Screw, Bind (M2 × 4)
229		45A11284W01	Arm, Elevator
230	3-E	01A40510W01	Assy., Shaft Roller Under
231		43A11272W01	Bush, Roller
232		04C42091G11	Ring, "E" (M2. 5)
233		47A12135W01	Shaft, Screw Elevator
234		04B41345P13	Washer, Lock (M1. 7)
235	3-D	01A11565W01	Assy., Rivet Arm Switch
236		41B11514W08	Spring, Extension
237	2-D	41B11514W02	Spring, Extension
238	2-E	44A11481W01	Gear, Lever Middle
239	2-E	44B22139W01	Gear, Lever
240	4-F	41A31495W01	Spring, Elevator
242	2-E	44A11281W01	Worm
243	2-E	04B41345P22	Washer, Lock (M2. 6)
245	3-F	30T73687F17	Wire, Parallel (3P)
247	2-D	45A11441W01	Arm, Block A Magazine
248	2-D	03S94385F01	Screw, Pan (M1.7 × 2. 3)
250	2-C	41A11559W01	Spring, Torsion
252	3-B	04B41345P24	Washer, Lock (M2. 1)
253	3-B	07A31787W01	Plate, Top
254	2-B	03S44205G94	Screw, Pan (M1.7 × 2)
255		03S40014G62	Screw, W/Washer (M2 × 3)
256		03S10042W06	Screw, Pan (M2 × 7)
257	2-G	29C41045P09	Lug, Wrap Around
258	3-B	43A41006F01	Spacer, Polyslider
259	3-C	01A31782W01	Assy., Rivet Clamper
260	2-E	45A31789W01	Arm, Kick Gear
261	2-E	43A11485W01	Bush, Gear
262	2-E	41A11480W01	Spring, Compression
265	2-D	01A31779W01	Assy., Rivet Arm Roller (L)
266	3-D	01A31780W01	Assy., Rivet Arm Roller (R)
267	3-D	01A40509W01	Assy., Shaft Roller
268	4-F	44A11275W01	Worm, Wheel
269		47A11302W01	Roller, Lifter
270	2-C	44A11278W01	Worm
271	2-C	44A11279W01	Gear, Roller Middle
272	2-C	44A11280W01	Gear, Loading Roller
273		03S38013W10	Screw, Pan (M2 × 7)
274	2-G	44B11283W01	Gear, Timing
275		43A12211W01	Sleeve, Cushion
277	3-H	45A31790W01	Arm, Switch HP
□ 278	2-F	01V43800W61	Assy., Drive Unit
○ 278	2-F	01V43500W73	Assy., Drive Unit
△ 278	2-F	01V43500W73	Assy., Drive Unit
280	4-G	44A11276W01	Worm
282		03S44205G96	Screw, Bind (M2 × 5)
283		03S40014G12	Screw, W/Washer (M2. 6 × 4)
300	3-B	44A90998F01	Gear, Screw
301	2-A	07C10922W02	Bracket, Motor
302	3-A	46A91007F02	Stud, Gear

NOTE : The parts without part numbers are not supplied.

□ : For DR24A02A Model Only, ○: For DR24A030 Model Only, △: For DR24A040 Model Only, Others : Common.

Symbol No.	Index	Part No.	Description
303	2-C	03S40014G07	Screw, W/Washer (M2 × 4)
304	2-A	44A90996F01	Gear, Motor
305	3-A	44A90997F01	Gear, Middle
306	3-A	04B41345P02	Washer, Lock (M1. 7)
307	2-A	41A10928W03	Spring, Shaft-150
308		07A30961W01	Stopper, Shaft (B)
309	2-B	47A10927W02	Shaft, Screw
□ 310	1-A	84T15149W01	FPC Actuate P. C. Board
○ 310	1-A	84T45270W01	FPC Actuate P. C. Board
△ 310	1-A	84T45270W01	FPC Actuate P. C. Board
311	2-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)
312	2-B	01T70458F02	Assy., GND Wire
313		03S70494F17	Screw, Pan (M1. 7 × 8)
315		75A12210W01	Rubber, Cushion
316	3-C	47A30925W01	Shaft, Pick-Up
317	1-B	07A40743W01	Bracket
□ 318	3-B	04S40075G61	Washer, Polyslider (M2. 1)
○ 318	3-B	04S40075G06	Washer, Polyslider (M2. 1)
△ 318	3-B	04S40075G06	Washer, Polyslider (M2. 1)
319	2-C	07B10923W01	Bracket, Screw (M2. 1)
320		03D40121T38	Screw, W/Double Washer (M2 × 5)
321	1-B	03S40014G69	Scerw, W/Washer (M2 × 8. 5)
322	3-C	41C10925W02	Spring, Nut

Miscellaneous

501	4-C	88T15309W01	Pick-Up Unit SF-87. 5
502	2-F	48T16057W01	LED, AN501 (RED)
503	3-B	48T16057W01	LED, AN501 (RED)
504	4-B	48T16057W01	LED, AN501 (RED)
505	3-D	59T90879F01	Motor, Load 6V-260mA (LOADING)
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)
507	2-B	59T52973F03	Motor, Servo 6V-210mA (SLED)
508	4-G	48T15722W01	Interrupter, Photo GP1S51
509	3-F	48T15938W03	Transistor, Photo PS5022-B1
510	3-E	48T15938W03	Transistor, Photo PS5022-B1

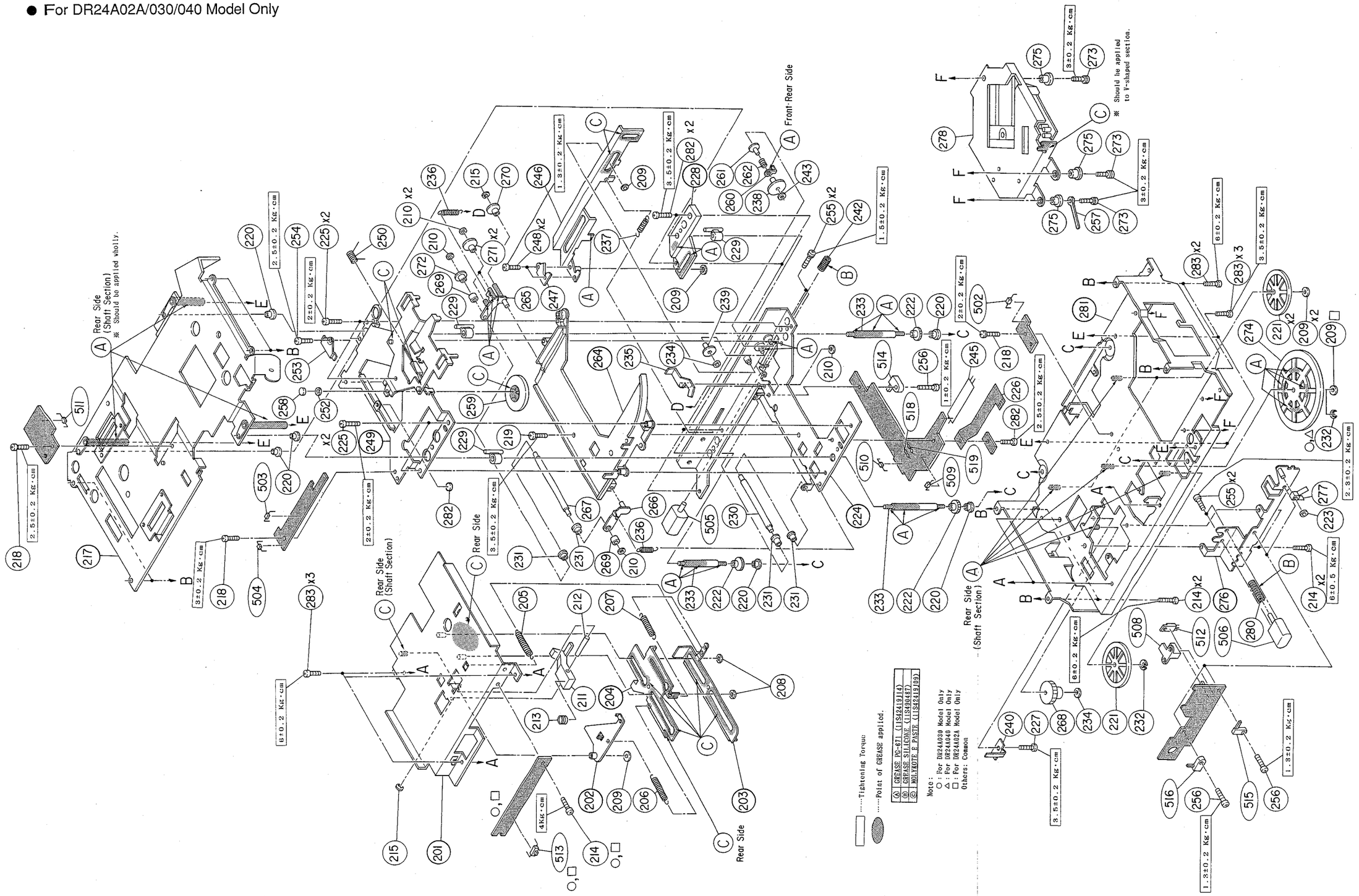
Symbol No.	Index	Part No.	Description
511	3-A	48T15938W02	Transistor, Photo PS5022
512	4-G	48T51089F04	Transistor, 2SA937
□ 513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)
○ 513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)
514	3-E	40T71025F01	Switch, Detector (LOADING)
515	5-G	40T71025F01	Switch, Detector (HOME POSITION)
516	5-G	40T71025F01	Switch, Detector (MAGAZINE)
517	1-C	40T71025F01	Switch, Detector (LIMIT)

NOTE : The parts without part numbers are not supplied.

□ : For DR24A02A Model Only, ○ : For DR24A030 Model Only, △ : For DR24A040 Model Only, Others : Common.

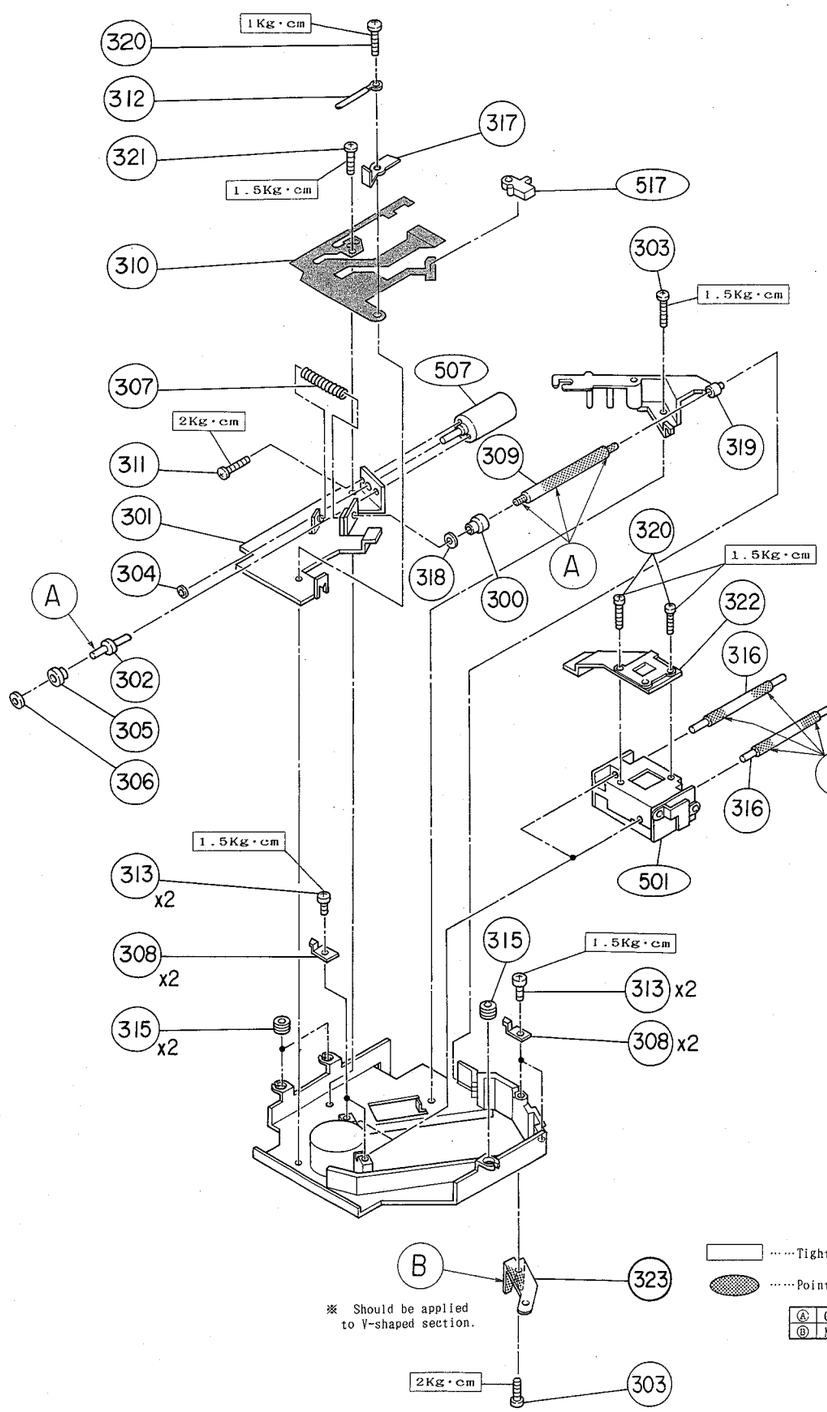
Exploded View (CD Mechanism) (1/2)

● For DR24A02A/030/040 Model Only


Front-Rear Side
Rear Side (Shaft Section) ※ Should be applied wholly.
Rear Side (Shaft Section)
※ Should be applied to V-shaped section.
Rear Side
Rear Side (Shaft Section)
Rear Side
Rear Side
Rear Side (Shaft Section)
·····Tightening Torque
·····Point of GREASE applied.
Ⓐ GREASE PG-671 (11S42419114)
Ⓑ GREASE SILICONE (11S49904B7)
Ⓒ MOLYKOTE E PASTE (11S42419092)
Note:
○ : For DR24A030 Model Only
△ : For DR24A040 Model Only
□ : For DR24A02A Model Only
Others: Common

Exploded View (CD Mechanism) (2/2)

● For DR24A02A/030/040 Model only



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